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Emergency Building Temperature Restrictions; Amendment of Regulations

DEPARTMENT OF ENERGY

Office of the Secretary

10 CFR Part 490

[Docket No. CAS-RM-79-110]

Emergency Building Temperature Restrictions; Amendment of Regulations

AGENCY: Department of Energy.

ACTION: Final rule.

SUMMARY: Under the authority of the Energy Policy and Conservation Act (42 U.S.C. 6201) (EPCA) as amended, Executive Order 11912 (41 FR 15825, April 13, 1976) and the "Standby Conservation Plan No. 2: Emergency Building Temperature Restrictions" (44 FR 12906, March 8, 1979), the Department of Energy is amending the Emergency Building Temperature Restrictions (EBTR) regulations (44 FR 39354, July 5, 1979) which became effective on July 16, 1979 (44 FR 40629, July 12, 1979) and were extended on April 15, 1980 (45 FR 26019, April 17, 1980). These amendments were published as notice of proposed rulemaking on May 27, 1980 (45 FR 35788).

The regulations place restrictions on space temperatures for heating and cooling, and on hot water temperatures in commercial, industrial, and other nonresidential buildings to reduce energy consumption.

These amended regulations are intended to improve the operation of the program based on experiences to date. The specific changes and rationale are set forth in the supplementary information section.

EFFECTIVE DATE: These amended regulations become effective January 26, 1981.

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I. Background of EBTR Final Regulations

Standby Federal Conservation Plan No. 2, Emergency Building Temperature Restrictions (the Plan) was submitted to and approved by Congress pursuant to Section 201 of the Energy Policy and Conservation Act (42 U.S.C. 6261), which authorized the President to develop energy conservation contingency plans. Emergency Building Temperature Restrictions (EBTR) final regulations (the regulations) were published by the Department of Energy (DOE) on July 5, 1979 (44 FR 39354) and became effective by Presidential Proclamation on July 16, 1979 (44 FR 40629, July 12, 1979 and 44 FR 41205, July 16, 1979). The President issued a Proclamation on April 15, 1980 (45 FR 26019, April 17, 1980) continuing EBTR in effect until January 16, 1981, unless earlier rescinded.

II. Background and Brief Description of Amendments

The amendments included in this final rulemaking were published as a notice of proposed rulemaking on May 27, 1980 (45 FR 35788). They have been developed based upon more than nine months' experience in operating the nation's first peace time emergency conservation program, and in response to public comment received on the termperature restrictions throughout the effective period of the regulations, including over 61,000 telephone calls on the Emergency Conservation Service Hotline, 400,000 pieces of mail, and comment from trade and professional organizations, as well as from Federal, State, and local agencies. The proposed amendments have been revised in this final rule to incorporate suggestions received during the public comment period (May 27–June 26, 1980 and at a public hearing on these amendments held on June 12, 1980, in Washington, D.C.

The proposed amendments expanded on and presented new definitions of several terms to clarify the coverage of the EBTR and complement references to new refinements in the regulations. Of particular note are the addition of descriptions of "waste energy" and "intermediate season," and the introduction of the new term "work station."

Section 490.12, covering HVAC systems with a capability for simultaneous heating and cooling, was modified to simplify the choices of building owner/operators in complying with the temperature restrictions. Section 490.12(c)(3) further clarified the use of reheat. The problem of increased energy demand when lowering heat pump settings during unoccupied periods was resolved by raising the setback temperature in § 490.14. Several new sections supported the requirement that HVAC systems and control devices be maintained in proper balance and repair, to supplement existing §§ 490.13(a) and (b) and 490.23(a) which require "reasonable tolerances of accuracy." Relocating temperature control devices to circumvent the intent of the regulations was also prohibited.

Also proposed were refinements to temperature measurement techniques, including a proposed "breathing level" measurement height, and an allowance for adjustments based on conditions at representative work stations. The latter was complemented by an amendment prohibiting use of an auxiliary heater to raise the temperature above 65° F. at a work station.

The regulations add two new general exemptions to protect the health and safety of persons covererd by the regulations. Both allow temperatures at variance with the regulations when work or school procedures require an individual to wear special or protective clothing or to shower.

The proposed amendments also included a partial exemption for senior citizen centers, in accordance with a previous regulatory amendment published in the Federal Register (45 FR 13050, February 28, 1980).

Section 490.34 was elaborated to encourage building operators to comply with exemptions or exceptions "without undue delay."

Finally, DOE proposed, but has determined it will not adopt, an

alternate plan amendment as a self-certifying partial exemption. This exemption would have allowed building owners and operators to maintain tempreatures of 68° F. when heating and 74° F. when cooling provided they implemented collateral measures to reduce energy consumption which together would save a comparable amount of energy as would strict compliance with the basic temperature restrictions, i.e., 65° F. and 78° F., set forth in the regulations.

III. Summary of Public Comments

Nine oral presentations and 73 written comments were made on behalf of a broad range of interests, including private industry, educational and cultural institutions, trade and professional associations, building owners and operators, and various units of Federal, State, and local government.

None of the nine who testified at the public hearing in Washington, D.C., on June 12, 1980, seriously disagreed with EBTR in principle or criticized the operation of the program during its first phase, and none suggested that it be discontinued. Mr. Chuck Clinton, director of the District of Columbia Energy Unit, said: "Basically, we think that the program is a solid one, that it fits in beautifully with all the other energy conservation and renewable resource programs that we are running in the District."

From the State of Montana, Mr. Joseph Ziegler, energy coordinator, made an unscheduled presentation at the public hearing in Washington, D.C. He argued strongly that the proposed alternate plan exemption be rejected. He declared: "We feel that the alternative plan suggests a negativeness to EBTR. The word 'emergency' has no meaning anymore." When asked if there was opposition to the EBTR program in Montana, where he had conducted over 800 inspections, he replied: "No, non whatsoever. We believe in EBTR with all our hearts."

The other seven speakers at the public hearing represented trade associations or corporations, and their views are reported below.

Throughout the first nine months of the EBTR program, the public's reception was surprisingly positive. Most of the letters and telephone calls received were serious requests for advice on compliance. Criticisms were almost unanimously tempered and reasoned. Building owners and operators who objected to the regulations almost always explained how they were conserving energy in other ways. While citizens occasionally may have been disturbed over perceived discomfort and inconvenience, on the whole, the EBTR program brought out an overwhelming demonstration of patriotism and willingness to share the burden of the Nation's need to conserve energy. Many of the complaints against buildings thought not to be in compliance were from citizens who said they felt it was unfair that most building owners/operators complied while others tried to shirk their responsibility.

The great majority of comment received on the proposed amendments was wholly or in part directed at the proposed alternate plan exemption. The remainder of the responses addressed several other parts of the proposed amendments, suggested new changes, or commented on the current temperature restrictions.

Businesses

Twenty comments were received from businesses and industrial firms. By and large, commenters felt that the EBTR regulations, with proposed amendments, would be workable for their companies, and that the temperature levels had been, and would continue to be, acceptable to their employees and customers. About half of those commenting favored the proposed alternate plan amendment in principle.

Only two negative comments were received. One came from Perkin-Elmer Computer Operations, Oceanport, New Jersey, which called EBTR "totally impractical for the workplace." The writer felt that the regulations had contributed to sickness, absenteeism, and losses in productivity, but offered no definitive documentation to support these claims, and he did not indicate that an exemption had been requested. He felt that the alternate plan exemption would be welcome. The Trane Company of La Crosse, Wisconsin, was of the opinion that "government regulations to control the temperature setting in buildings as a way of conserving energy are not necessary."

Several corporations, including International Business Machines (IBM) and Meredith Corporation of Des Moines, Iowa, endorsed the proposed alternate plan amendment without extensive comment. Two others, Southwestern Bell Telephone Company and Parker-Hannifin Corporation, commended the alternate plan proposal for the "flexibility" it offers to building owners and operators in choosing the methods of compliance. AMAX Coal Company expressed the opinion that with such alternate plans, as much energy, or more, might be saved as would compliance with the unamended regulations.

Among those favoring the alternate plan concept, the greatest concern was expressed about equity to those building owners and operators who had instituted significant energy conservation programs prior to the institution of EBTR in mid-1979. They felt severe constraints on their ability to "squeeze" more savings out of buildings which had been made energy efficient prior to the EBTR regulations. The Gillette Company's St. Paul Manufacturing Facility, for example, reported a total energy reduction of 44 percent during 1979 over a base year of 1973, when its energy conservation program was launched. Taylor Drug Stores, Louisville, Kentucky, detailed many conservation measures, including relamping the entire chain and offices with energy saving fluorescent lamps. Taylor, consequently, asked what the base year would be—before 1977 when it took most of its measures, or after—and how EBTR would affect new stores opened in 1979–1980. Marathon Oil Company of Findlay, Ohio, protested that an "alternate plan exemption is unfair to those building owners or operators who voluntarily instituted energy conservation measures prior to the implementation of this emergency plan." The Firestone Tire and Rubber Company of Akron also expressed concern that a building operator who reduced lighting, added storm windows, and took other conservation steps before 1979 would now be required to take other, more capital-intensive measures to achieve equivalent energy savings. Firestone recommended that a building operator be allowed to select any base year.

Eastman Kodak supported the concept of an alternate plan exemption, and made an innovative suggestion, namely, that the savings reported by industrial firms under the DOE Energy Efficiency Improvement Report program be accepted by the Department as proof of savings under the EBTR program, as well. Such an option would be available only to those major industrial users which already are participating in the reporting program. Some other method of documenting savings would have to be used by others. Kodak also urged that the words "covered building located within a geographically contiguous property" be added, so that savings could be measured for an industrial complex rather than building-by-building, as at present.

The General Electric Company, Lighting Business Group, Cleveland, Ohio, testified at the public hearing in support of the concept of a lighting wattage reduction qualifying for the

partial exemption. The spokesman urged that the words "lighting reduction" in the proposed rule be changed to "lighting wattage reduction."

Reheat is prohibited, in the original regulations and in these final regulations, "except in those cases where a licensed professional engineer certifies that adequate temperature control cannot be achieved without the use of reheat." Kodak proposed that the words "or humidity" be inserted to make the provision read:
"* * * engineer certifies that adequate temperature or humidity control cannot be achieved * * *". Kodak also proposed that a higher temperature be allowed under certain circumstances at the work station, e.g., where a higher temperature was needed to counteract the radiant cooling effect of low wintertime wall temperatures. The Trane Company recommended that the use of reheat be allowed without forcing the owner to hire a consulting engineer for the purpose of certifying its necessity.

Three companies commented on the proposed general exemption: "With respect to restrictions on heating only, to protect the health of persons in workplace or school shower and changing rooms where showers are considered a required part of customary work or school procedure."

AMAX Coal Company fully supported this exemption, but protested the adjective "required," as did DuPont. AMAX said that it is company policy to encourage showers and to provide showering facilities; "However, it is not our practice to *require* that workers take such showers * * * to the best of our knowledge, showering has never been a required procedure in coal mining." DuPont Chemical Company "requires" or "strongly recommends" that approximately 7,000 of its 100,000 employees change clothes and shower before leaving the workplace. The Upjohn Company, Kalamazoo, Michigan, commented that it has found "a special hardship" for its employees in regard to temperatures in the locker and shower rooms.

Two other corporations, each with a successful energy management program, testified at the public hearing that EBTR was an integral part of their ongoing energy conservation efforts, and both urged DOE not to publish the alternate plan amendment as a final rule.

American Telephone and Telegraph Company's spokesman said, "The Bell System is opposed to the amendment for we feel that it weakens existing energy conservation efforts." He said that AT&T has adhered, for over three years, to guidelines identical to the Emergency Building Temperature Restrictions. "In the interest of continued and greater conservation," he said, "the Bell System encourages the continuation of these regulations without the proposed weakening amendment so as to keep alive the vital need to conserve energy."

AT&T said that the alternate means are actions which any building owner or operator should take because they "are good common sense approaches * * * for the business taking them." In addition, he pointed out that exemptions and exceptions are available to meet particular needs. He concluded, "However, we feel it is wrong to grant a blanket exemption because other conservation actions are implemented."

The Bell System owns and operates some 28,000 buildings. Since 1973, it claims to have reduced building systems' energy per square foot of floor space by 41 percent. In 1979 the company used seven percent less energy than in 1973, saving the equivalent of 23 million barrels of oil, and avoiding energy costs of over $800 million.

Pan American World Airways has had an energy management program at its John F. Kennedy International Airport terminal in New York since 1974. Following implementation of the Emergency Building Temperature Restrictions on July 16, 1979, the manager for utility control for building services at that terminal instituted not only the restrictions, but a whole new strategy of heating and air-conditioning, as well. "For example," he testified, "it was found that during the spring and fall days, when the 6 a.m. temperature is about 55 degrees, and the peak afternoon temperature is 70, we could ventilate a building with outside air without any treatment. Formerly, we would heat the 55 degree air and cool the 70 degree air at considerable expenditure of energy. Now, we are able to close the hot and chilled water control valves, and we have gone as long as an entire week without expending one single BTU."

During the 10 months of the EBTR program to the time of the hearings, Pan Am had reduced the number of BTUs required to heat and cool the terminal by 33 percent, compared to the same period in 1978–1979, at a savings of $300,000. At the maintenance base, savings of 30 percent and $425,000 were attributed to EBTR. Those savings were made despite a five percent rise in the total degree days for the later period.

"Pan Am's experience has been that almost all workers are accepting 65/78 degrees Fahrenheit," the spokesman said. "They are wearing more clothes in winter; and they are conditioning themselves to the warmer and cooler temperatures. In a number of instances they have taken the example to use these settings in their homes as well."

Pan Am strongly recommended, "with the support of the Air Transport Association that the Emergency Building Temperature Restrictions be continued unchanged," i.e., that the alternate plan amendment not be adopted.

Trade Associations

Comments were received from fifteen trade associations (including a joint comment of the American Iron and Steel Institute and the General Motors Corporation) and nine professional associations. Their comments are summarized below.

Several of the trade associations submitting comments addressed the EBTR program in general, both in opposition and in favor. Two commenters, American Iron and Steel Institute and General Motors Corporation, supported the amended regulations generally, but did not support mandatory Federal conservation programs, feeling that "the market place has achieved, and will continue to achieve, the necessary energy use reductions without undue regulatory complications and administrative burdens."

Of the trade associations commenting, the Building Owners and Managers Association International (BOMA) and the National Restaurant Association (NRA), were particularly supportive of the alternate plan provisions in the proposed rulemaking. Both of these organizations argued that the main value of EBTR is not so much in the energy savings specifically attributable to temperature controls but rather in the "consciousness raising" of the need for energy conservation which the program has fostered.

BOMA offered a detailed plan, which in conjunction with the 68°/74°F. limitations, requires savings in other areas of building operation, many of which are claimed to result in energy use reduction on a permanent basis (e.g., investments in facilities and equipment which incorporate new energy-saving technologies) as well as through greatly improved maintenance. BOMA also raised concerns about the current EBTR program not recognizing energy savings which could occur through means other than temperature restrictions and therefore saw the alternate plan feature as a valuable addition to the EBTR program. BOMA found no great difficulty in proving compliance under their alternate plan approach.

BOMA also suggested selecting a base year for comparison purposes, against which to assess energy savings which

came prior to the implementation of EBTR, that would allow total progress to be shown during the EBTR program.

NRA viewed the alternate plan provision as a means for avoiding uncomfortable temperature requirements while still accomplishing an equal amount of energy conservation. NRA is particularly interested in this approach since it believes that restaurants depend on comfort as a major factor in bringing in customers to its member establishments. NRA contrasted the restaurateur's situation with that of a company that is paying people to work in a facility where temperature restrictions apply, and calls this difference an important distinction.

NRA further pointed out that while only 30 percent of total restaurant energy use is for room temperature control, 70 percent is used for processes, i.e., energy used in preparing food. The proposed NRA alternate plan recognizes this ratio, and, while requesting a minimum heating temperature of 70°F., expects to save at least the equivalent amount of energy from improved process energy efficiency. NRA's maintenance plan, submitted in detail, requires a record of monthly inspections which will encourage energy management actions to be taken in the process side of the restaurant's business. NRA urges that this record is satisfactory evidence that an equivalent amount of energy is being saved and feels it should be acceptable proof in lieu of fuel and utility bill records, since NRA indicated that the latter may not always be available.

NRA argued for the 70° F. heating minimum from two points of view. First, 70° F. is represented as a minimum temperature for comfort where people sit and relax. Second, the restaurant industry serves large numbers of senior citizens every day and NRA notes that the proposed rulemaking specifically provides that facilities dedicated to senior citizens be exempted from the 68° F. heating maximum and instead be adjusted to 70° F.

NRA further recommended that to give credit for previous conservation efforts companies having long-standing conservation programs be allowed to use their records in place of fuel and utility bills as evidence of compliance.

NRA acknowledged that fast food restaurants are probably not interested in the alternate plan option since customers are inside their buildings for a minimum amount of time and further, that the competition in fast food business necessitates energy conservation.

The comments of three other associations, as well as those of six individual restaurateurs, supported the idea of conserving energy but felt that it should be done with programs tailored to and by the industry involved rather than a blanket standard such as the EBTR program provides. They praised the alternate plan approach and made most of the points raised above.

Some other specific comments received on the proposed alternate plan exemption by associations include:

Retailers—Association of General Merchandise Chains, National Retail Merchants Association, American Retail Federation, National Association of Chain Drug Stores—supported the proposed alternate plan exemption because it adds flexibility to their efforts to conserve energy.

The American Iron and Steel Institute and General Motors also supported the alternate plan exemption, stating that "energy conservation measures should, to the maximum extent possible, provide industry with the flexibility to reduce its energy usage in the ways best suited to its own efficient operation." They felt that this provision will result in comparable energy savings while reducing the "hardship of this program on the public."

The Air Transport Association (ATA) opposed the alternate plan amendment. The ATA suggested that "significant energy saving would be jeopardized by the adoption of the proposed amendment." The ATA also submitted a 173 page document, "Energy Evaluation and Management Manual for Airports," by Harley Ellington Pierce Yee Associates (revised April 18, 1980), and noted that the procedures outlined in the manual were implemented at several airports throughout the country with "resulting energy savings in the 30–40 percent range."

The American Bakers Association (ABA) and the Food Marketing Institute, joined by several of the retail trade associations, opposed requiring buildings to post new compliance certificates. The ABA commented that "DOE should issue amendment stickers and forms to be required *only* of those facilities desiring to take advantage of the new 'alternative plan' amendments."

The American Iron and Steel Institute (AISI) and General Motors support workplace and school shower and changing room exemptions and they note that this exemption will "in some circumstances" permit industry "to comply with labor contracts and the various Federal, State and local health and safety regulations." They also support the exemption to protect the health of individuals required to wear special and protective clothing. They noted, however, that in some instances employers may require special clothing that is not required by security, safety, or health *codes*, and therefore suggested deleting the word "codes" and inserting the word "reasons" in Section 490.31. AISI and General Motors suggested that DOE has exceeded its statutory authority in Section 490.34 by requiring building owner/operators to comply with exemptions or granted exceptions. They stated that DOE has no statutory authority to go "beyond the granting of exemptions to grant affirmative relief requiring maintenance of certain higher/lower temperatures." They asserted that this authority lies with state or local authorities.

The American Hospital Association (AHA) opposed redefining "hospital and health care facility" to include all doctor's and dentist's offices within the scope of the regulations. AHA recommended that "a blanket exemption be given to all physicians' offices with examination and treatment rooms wherever they are located * * * because patient health, safety, and welfare could be threatened by low heating temperatures mandated by the regulations."

The National Club Association supports the senior citizen exemption, but suggests that the exemption be valid for the entire day in the location that a senior citizen activity is taking place. The association also urges that shower and changing facilities in all schools and clubs, both public and private, be exempted from the regulations.

The Food Marketing Institute suggested modification of the language pertaining to hot water temperatures to permit exemptions in buildings where hot water temperatures "higher than 105 degrees F. are needed for cleaning and sanitizing food contact surfaces of equipment and utensils."

Professional Associations

The National Association of Counties Research, Inc., pointed out that EBTR has been a valuable energy saving tool, and gave two examples—Genessee County, Michigan, and Broward County, Florida—where 25–30 percent energy savings have been realized in county office buildings. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) commented that the EBTR approach should be used only where clearly necessary, and opposed making the restrictions permanent.

With regard to the EBTR regulations, ASHRAE noted, "While we do have some reservations about the long range and permanent effects of EBTR, ASHRAE endorses the proposed changes to the current regulations in the

Notice of Proposed Rule Making, dated May 27, 1980. Our Society has provided DOE with suggestions for technical improvements to the regulations and we are pleased to note that many of these suggestions have been incorporated in the proposed rule. All of the proposed rule changes are technically correct * * * ASHRAE offers its continuing support to make the EBTR program more effective. Our Technical Committee T.C. 9.6 stands ready to provide DOE with additional comments, and we offer our expertise on future revisions to the program."

In addition to its specific comments, ASHRAE also submitted copies of many technical papers and articles on the EBTR program and on indoor comfort that have appeared recently in ASHRAE publications.

With respect to the proposed alternate plan exemption ASHRAE said that it would make the program more "equitable and efficient." The American Consulting Engineers Council and the Associated Air Balance Council also supported the alternate plan exemption.

The following specific comments were provided by professional associations:

Donald G. Carter, testifying on behalf of the American Consulting Engineers Council, indicated specific support for two other aspects of the proposed revisions: The reliance on a "Vernon-type globe thermometer" to take temperature readings as an alternative to calculating an adjusted dry-bulb temperature for a particular room or condition, and the addition of a definition for "intermediate season" to take into consideration those times when combined heating and cooling loads are required during the same day. He also was concerned, in the proposed alternate plan exemption, that in some large buildings, owner/operators and tenants may have disagreements about the best measures to take as an alternate plan, and suggested that an appeals process be implemented.

The Associated Air Balance Council (AABC) expressed concern about the wording of the amended § 490.17, which requires in paragraph (d) that "the HVAC distribution system is properly balanced in accordance with generally accepted industry practice." The AABC suggests that this balance be "in accordance with Associated Air Balance Council (AABC) National Standards," so the testing and balancing work will be performed by competent personnel.

The Nevada Classified School Employees Association suggested that the definition of "unoccupied period" be relaxed to exclude those periods when school custodial workers are performing non-routine maintenance.

The National Education Association (NEA) commended the proposed revision to the definition of "elementary school" and the additional language concerning heating exemptions for school showering and changing rooms. NEA suggested that this definition could be expanded further, to recognize new types of school facilities characterized by their "disconnected" construction. It also suggests that the regulations be amended to note that school showering and changing room exemptions include "secondary and postsecondary schools that require student use of the gym facilities."

The American Library Association, the Society of American Archivists, and the Association of Research Libraries all asked that the Exemption Information Form be revised to include libraries and archives as an example of institutions eligible for general exemption D, which deals with the protection of "materials essential to the operation of a business." They noted difficulties in communicating to local officials the importance of an exemption to protect archival materials.

Federal Agencies

The General Services Administration (GSA), the Department of Defense (DOD), and the U.S. Postal Service have responsibility for the large majority of all Federal buildings. As a result, the EBTR program office has maintained close liaison with these agencies, all of whom have executed the EBTR regulations with vigor. In response to the proposed rulemaking, comment was received from both GSA and DOD.

GSA did not endorse the alternate plan provision of the proposed rule. They felt instead that such a provision would be counterproductive and highly damaging to the achievement of national energy conservation and fuel usage goals. Further, they felt the provision would create confusion and prolong doubt about the seriousness of the energy crisis.

GSA suggested that if an alternate plan provision is needed for the private sector, perhaps a separate EBTR requirement might be developed for the Federal government. GSA felt the Federal government, in particular, should provide the role model for the country by being the recognized leader, through example, in conserving energy. GSA commented that existing temperature restrictions provide a reference level which building occupants are becoming accustomed to and are accepting as the norm. GSA felt that a liberalization in temperature levels would dissipate both the effort that has occurred and the consensus for the need to reduce energy consumption in buildings. GSA further suggested that "for individual buildings which are in untenable situations, specific requests for exemption be evaluated rather than a one-time significant change in temperature levels as proposed."

GSA felt the proposed alternate plan approach is inappropriate for the Federal Government in that (1) energy conservation savings were accomplished by capital investments based on a methodology of prioritized payback, (2) these investments had to compete with numerous other demands in the budget process, and (3) a relaxation of the temperatures because of implemented energy conservation measures would negate the savings that established the economic viability of the project.

The Department of Defense supported the alternative plan concept but noted several drawbacks:

There is no credit provided for retrofit activities which took place before the onset of the EBTR. This is particularly onerous since it penalizes building operators who took responsible action early;

Credit is authorized if corrective measures are being "instituted." This could easily offset any energy reduction gains, if construction were in progress for several months; and

The proposed rules do not speak to a methodology for determining energy savings. In point of fact, actual savings attributable exclusively to EBTR are extremely difficult to calculate.

DOD recommended the following changes respectively, to correct these deficiencies:

Authorize the 68/78 degree limits for buildings which have achieved documented performance standards at any time. Publish standards, such as 200,000 Btu/ft2/year or direct that criteria from the building energy performance standards (BEPS) be used;

Delete from § 490.36(a)(2) the words "or is instituting." Authorize alternate plan standards only when a percent reduction (e.g., 10 percent) of utility energy (in contrast to process energy) can be documented or building performance standards have been achieved;

Prohibit auxiliary electric resistance heaters when room temperature is 65 degrees or above since these heaters consume considerable energy;

Modify § 490.17 to preclude the "broom closet" technique for circumventing the intent of the EBTR. This occurs when the lowest temperature in winter and the highest temperature in summer is recorded in an obscure, unoccupied space, thereby

permitting the remainder of the building to be heated higher in winter or cooled to a lower temperature in summer. To correct this shortcoming, DOD recommended modifying the first sentence of § 490.18(a), to read "* * * or any other *regularly occupied* room controlled by the device."

States, Local Governments, School Districts

Energy officials from 11 States provided commentary on the proposed EBTR regulations, either through testimony or written comment. These included representatives from the States of Alabama, Arkansas, Colorado, Delaware, Hawaii, Massachusetts, Minnesota, Montana, New Hampshire, South Dakota, and Wisconsin. Comments were received from five municipalities, the District of Columbia; Houston, Texas; Manchester, New Hampshire; New York City; and Rockland City, New York. Comments were provided by two county governments, Wayne County, Michigan, and Erie County, New York, and by school districts in Los Alamos, New Mexico; Waco, Texas; and Peoria, Illinois.

The comments were precise, thoughtful, and well-informed. Since many of these units of government participated in the implementation of the EBTR during its first 9-month tenure, their comments were of particular value to DOE in coming to an appreciation of the administrative problems posed by the requirements of the EBTR regulations to date.

The vast majority of the commentary concentrated on the proposed alternate plan exemption. Most, such as the District of Columbia, made some gesture to "applaud DOE for its sensitivity to the serious concerns and problems that beset some business and building owners and operators," and noted that the proposed alternate plan would provide welcome flexibility in achieving the energy-saving objectives contemplated by the regulations. This view was ably summarized by the Erie County Department of Environment and Planning, which noted that the alternate plan is "especially welcome" as a "manifestation of a new spirit of flexibility not evident in the regulations which dominated Cycle I," and is "evidence of a recognition that energy conservation can be achieved most effectively by different measures in various regions and businesses, combined with a new emphasis on education rather than coercion."

Nonetheless, it must be said that acceptance of the proposed alternate plan exemption was highly qualified. Despite acceptance of the proposal as "fundamentally good" (New York City), practically all commenters qualified their support with a long listing of specific concerns touching on all aspects of administration, enforcement, and the validation and analysis of energy savings which would result. These are summarized in some detail below, together with the comments of those organizations which did not favor the alternate plan proposal.

Two States and two municipalities unequivocally rejected the proposed alternate plan exemption.

The City of Houston, exempted from the EBTR regulations because it is implementing an approved "comparable plan," noted that the proposed alternate plan exemption "is too liberal and takes the starch out of the EBTR, making it practically unenforceable." It noted, interestingly, that despite the fact that the Houston Plan offers an incentive clause which "authorizes application for a 1 degree variance for each 10 percent savings in energy," none of 20 such requests asked for reductions in the cooling level of 76 degrees, mandated by the Houston plan, to the 74 degree level proposed in the alternate plan exemption. Houston also pointed out that projected energy savings must be documented in advance of approval of any alternate approach.

The State of Hawaii recommended disapproval of the alternate plan proposal, noting that the self-certifying feature of the exemption would make it "impossible to determine compliance or non-compliance," and that "all exemptions that are taken must have written documentation to support their claim." In all cases, Hawaii recommended that a licensed professional engineer certify the calculations of savings projected, and suggested that the many variables affecting building use, such as new equipment, increased and varying occupancies, and differing working hours, would make it extremely difficult to document energy savings accurately. Unless this were done, the use of even the previous two years of utility and fuel consumption bills "would not be a valid base for comparison."

As noted above, the State of Montana asserted that the proposed alternate plan exemption would suggest "a negativeness to EBTR," and that the word "emergency" would no longer have any meaning. The psychological impact of the program would, it was felt, be "destroyed," and a very valuable outreach and educational effort diluted. In spite of the fact that Montana is a "tourist State" which has conducted over 800 inspections, it was noted that few people complained of "suffering," or that their business was adversely affected.

The response from the State of New Hampshire reflected the qualifications with which most States reacted to the alternate plan proposal. On the one hand, it felt that the alternate plan as described would be "unworkable and unenforceable," implying opposition to the idea. On the other hand, it noted that "to some extent we feel that certain types of businesses * * * do shoulder more than their share of the burden when the only approved energy strategy is temperature restrictions," and that it favored "some form of alternate plan for restaurants, lounges, and similar businesses where the personal comfort of the customer is a crucial part of the service." New Hampshire pointed out that with alternate plans it would be difficult: (1) For inspectors to document and verify when and what energy savings measures were taken, how much energy such measures conserved, and how those savings would have compared with those resulting from simple compliance with the EBTR temperature restrictions all along; (2) to recruit, train, and motivate compliance inspectors; and (3) to avoid "significant backsliding" on the part of building owners and operators. They concluded that, as a consequence of these problems, "much energy that could be conserved will not be."

Even where New Hampshire favored the use of an alternate plan, as with restaurants, it recommended that "the criteria for qualifying for that exemption be quite stringent." Before any such exemption is permitted, it suggested that a restaurant will have "instituted at least the following energy conservation measures": 6 inches of insulation in all ceilings, 3½ inches of insulation in all exterior walls, storm windows or double glazing, weatherstripping on all exterior doors, insulated heating and cooling ducts, installation of entry vestibules, and yearly heating system tune-ups. Finally, it recommended that utility energy consumption bills be retained and made available to inspectors "for the three most recent months, the average of which is less than the average for the same three-month period in any of the three most recent years (the comparison year to be chosen by the building owner/operator)."

To a degree, most of the commenting States and municipalities echoed concerns and remedies put forth by New Hampshire.

To avoid what New York City called "the danger that self-certification will lead to false claims on energy savings," many States recommended that

certification of the projected savings be obtained from a licensed professional engineer or a registered architect. Such a requirement was thought to be among the only practicable means of assuring that accuracy in energy savings would be guaranteed, together with evidence of sufficient quality and depth as to permit either a Federal, State, or local inspector to appraise the validity of an alternate plan being utilized by a building manager. The States of Delaware, Hawaii, Massachusetts, and Wisconsin also advocated such an approach, while Colorado noted that "short of hiring a professional engineer to undertake a laborious analysis, it is unclear to us how a building owner or operator could be certain of compliance * * *. It simply is not feasible or realistic for the DOE to expect building owners or operators to make such determinations without providing technical assistance to do so." It suggested that the final rule contain a "chart which establishes for a variety of building types the additional quantity of energy, stated as a percentage, that would have to be saved by a series of energy conservation measures in order to achieve compliance."

Preapproval of alternate plans, by either the State or Federal Government, was suggested by Alabama, Massachusetts, Wisconsin, and the City of New York, though none commented on the administrative burden this would represent to participating States or, where States chose not to implement the EBTR regulations, to the DOE Regional Offices.

The myriad of considerations and calculations which must be addressed by a professional engineer in certifying the energy efficiencies of an alternate plan were also noted by a number of commenters, as was the extreme difficulty this would pose for inspection personnel and for the inspection process. Massachusetts noted that the proposed alternate plan regulation "should be expanded to account for the plethora of variables that influence consumption. This will insure that comparative consumption data is based on common assumptions. It will also prevent unusually mild or cold winters/summers from unduly influencing the data." Among the variables it suggests, but is "not limited to," are: environmental data, climatic data, building data, operational characteristics, mechanical equipment, internal heat generation, and electrical equipment. New York City underscored that "the regulations would become meaningless without precise documentation, because inspectors may not be able to determine what constitutes proof of the required energy savings * * *. It is not realistic to rely heavily on consumption figures without considering factors such as changes in building utilization, occupancy, and most importantly, severity of weather measured in degree days." It felt that a building manager must be required to "have professionally certified documentation of required energy savings available onsite for inspection and verification."

The type of skills needed by an inspector to verify that a building was in compliance with the EBTR regulations through use of an alternate plan would change dramatically, with the process approaching more that of an audit than a simple room temperature inspection. The District of Columbia pointed out that the alternate plan exemption "directly increases the technical skill an inspector would need, particularly if the integrity of the inspection is to be maintained as in the past." The alternate plan exemption would "significantly increase the tasks and responsibilities of * * * inspectors," who would need to be "savvy and sophisticated enough not to be buffaloed." The District of Columbia concluded that an inspector would need to "have a considerably larger framework of experience—energy expertise—in order to make a sound judgment as to whether or not the alternative is, in fact, going to accomplish the same good that could have been expected under the original program." All of this, it noted, would require a commitment to much "greater expense."

The financial ability of some building owners or operators to take advantage of the alternate plan proposal was mentioned by the Waco, Texas, Independent School District, which noted that not all types of owners have "an equal opportunity to take advantage of the alternatives." It noted that most of the alternatives "require capital expenditures. A public entity such as a school district is harder pressed to expend funds so that a higher level of comfort is achieved than a typical business establishment which may pass on some or all of the capital expenditure cost to the customers." Erie County, New York, alluded to this problem while commenting on other aspects of the alternate plan, stating that "because of decreasing returns, to increased investments, most buildings can reduce (energy) usage 10–20 percent through changes in operation with only minimal investment, whereas further reduction usually necessitates an investment in some new equipment."

The difficulty of not penalizing those who have already taken energy-efficient actions was stressed by a number of States, and by Erie County, New York. Erie County noted that "the requirement that proof of equivalent energy savings must include fuel consumption data for the most current period and for the previous two years * * * penalizes those building operators who have undertaken energy conservation measures and rewards those who have done nothing. Thus, this requirement makes the alternate plan very easy for buildings where even the most elementary energy conservation steps have not been taken, while increasing the size of the necessary investment for those buildings where low cost measures have been in effect for years." Erie County concluded by noting that even a two-year period may not be appropriate since it has "experienced wide variation in winter weather over the past several years," which would, under the proposal, "provide skewed results." Wisconsin was also concerned that new buildings would be penalized, even though they may have improved energy efficiencies due to State energy codes. It suggested that a baseline should be set from which savings by full EBTR compliance could be calculated. A given building owner could then meet relaxed temperature restrictions by demonstrating alternate savings even from pre-EBTR design features." It suggested the granting of "energy credits" to buildings which have met stringent energy codes, or have achieved substantial energy efficiencies which should be recognized during any imposition of the EBTR standards.

The balance of commentary offered by State and local governments and school districts dealt with a disparate range of topics related to the administrative and technical aspects of the EBTR regulations, and was not confined to only those amendments proposed in the May 27, 1980, Federal Register. To afford some idea of the views of these organizations, a representative summation of their key concerns (focusing largely on comments other than those already noted dealing with the alternate plan proposal), follows here.

Alabama noted:

The need for a more centralized and comprehensive public education and public relations efforts, pointing out that despite DOE and State efforts, "some people were unaware of the temperature restrictions."

The Certificate of Building Compliance should be printed in a single color scheme, especially since the program will now be an extended one.

The multi-colored certificates, which resulted from various printings during the course of last year's effort, are, they felt, confusing to the public.

Arkansas believes that the exclusion provided from the regulations to elementary schools should not apply during periods in which these buildings are unoccupied, as energy savings could be achieved during such periods. It also feels that States participating in the EBTR program should be permitted authority to inspect Federal facilities within its jurisdiction. Federal facilities are currently inspected by the agencies themselves (principally the General Services Administration, the U.S. Postal Service, and the Department of Defense, the principal Federal building owners/operators).

Colorado suggested that:

Buildings utilizing heat pump systems with resistance reheat coils have experienced increased energy usage or higher energy costs through increases in demand resulting from EBTR night temperature setback requirements and subsequent morning reheating. It felt that DOE's recommended relaxation of the requirements by five degrees (from 55 to 60 degrees) was an inappropriate resolution of the problem. It suggested that air-to-air heat pumps with supplemental resistance heat should be exempted from the setback requirement.

Colorado suggested that an alternate plan should have no temperature requirements whatsoever, and that building managers be permitted to meet EBTR-contemplated energy savings through individual measures which may in no way require restrictions on temperatures. Should DOE accept such an approach, however, it suggested that the Department set "a target percentage for energy savings to be realized from the alternate plan." The initial EBTR was "overly simplistic and prescriptive and ignored the major source of potential energy savings in commercial buildings: energy efficient operations and maintenance procedures."

The flexibility suggested by the alternate plan may persuade Colorado to join the program, since it felt confident in its capability to train and technically advise building owners and operators regarding the EBTR program.

The State of Delaware noted that:

Elementary schools, nursery schools, and day-care centers should be granted general exemptions rather than being excluded facilities. This would permit them to adhere to the hot water temperature and night time setback provisions of the regulations, and achieve the energy savings contemplated from those actions. Delaware agreed with the City of New York by noting that this step "would bring elementary schools under the program when no children are in them. Many elementary school buildings are open approximately 250 days a year while class days number approximately 185 days. Quite frequently, elementary school buildings are used by older children and adults during nonschool hours. Currently, use by these non-protected groups is not covered. We believe it should be."

Delaware also suggested that differentiation should be made in heat pumps based upon the type of supplemental energy. "While adjusting the setback temperature or temperatures for units with electrical supplemental heat should be energy conserving, it would not be for units with oil or gas supplemental heat." It suggested the amendment be modified to state that the setback temperature "will be set at the lowest possible point that will not require electric resistance supplemental heat."

The District of Columbia provided extensive comments on all aspects of the EBTR program and administrative process, including many of those above. Among the additional comments it offered were the following.

A restatement of the undeniable national need to conserve energy through all practicable means, and a summation of how the District has organized itself toward that end. It also expressed some disappointment that, given the need, only 24 States and Territories chose to administer the program within their jurisdictions.

It noted that the use of engineering students from Howard University as inspectors served the two-fold purpose of providing a learning experience to the students and providing a "future pool of human resources" upon which to draw for other energy conservation programs.

The District felt that public compliance was very high, in the range of 80 percent, and that building compliance was often brought to full level once building owners and managers were informed of the program's requirements and furnished the needed literature. It treated most of its inspections (as did many States) as an opportunity to educate building managers, rather than as a punitive enforcement activity. It did suggest, however, that an adequate enforcement mechanism does not exist, despite the possibility of fines, and that one must be devised.

The District concluded that the program was a "solid one," that "fits in beautifully with other energy conservation programs." It served as a "terrific springboard" to discuss other conservation efforts with many who were cooperative and anxious to learn more.

The Commonwealth of Massachusetts commented extensively on the alternate plan proposal, and its own efforts and experiences in implementing the Massachusetts comparable plan. Among the many technical comments it offered were those which suggested that:

The proposed temperature band in the alternate plan exemption was not sufficiently flexible, and that many buildings would not qualify for the plan under such a strict requirement. Thus, "long term energy savings may be forsaken for the want of three degrees of warmth.

"The alternate plan presents an ideal opportunity to garner long term savings by specifying that the energy conservation measures be permanent alterations to either the building envelope or energy utilizing systems."

Process energy should not be included in the consumption calculation. Massachusetts felt that this is wise "because process energy may be difficult to define; increased production can skew consumption data such that a building owner/operator would be hard pressed to qualify under the alternate plan exemption; and lower consumption due to debilitating economic conditions should not provide the justification for compliance. An example of this point would be a restaurant. As the number of meals that are served decreases, so will the energy consumption levels, whether or not any conservation measures are taken."

The State of Minnesota enclosed an extensive report covering its experiences in implementing the EBTR program, and commented on a number of the technical issues raised above. Among those comments were suggestions on how to deal with the provisions related to reheat, the night time temperature setback requirements, and the use of auxiliary heaters. It also noted that:

The requirement for balancing systems may go beyond the authority of the EBTR program, and suggested instead that proper maintenance procedures be mandated.

Cold well water systems should not be exempt, unless the "well water is pumped by windmill and reused in irrigation. There is no sense in wasting water because it is not a fossil fuel."

Further refinement of what constitutes a safety risk is needed, since "people working on machinery have no more right to an exemption than secretaries working with their fingers on a typewriter. Far and away the most common complaint with EBTR in

Minnesota's experience was with secretaries and typing."

The City of New York, which conducted 1,100 inspections and found a compliance rate of 80 percent, noted, among other things, that:

Section 490.41 should be reinforced to stress that the use of auxiliary heaters is prohibited where this will raise room temperatures above 65 degrees, and to note that the individual who uses such heaters is liable for noncompliance.

The definition of elementary school should be modified to note that any location, such as school museums and libraries, where elementary-aged school children congregate would be excluded entirely from the regulations during the period of their congregation.

The State of South Dakota took exception to the proposal that showers not be exempted from the regulations where their use is the consequence of an optional choice on the part of the user. "Given the national movement to support and encourage physical fitness," it suggested, "this would appear to be counterproductive." South Dakota felt that requiring a person to return home to shower would "subject the body to the chill and stress of shorter cool down periods after exercise," and, according to one doctor it consulted, "we feel this will cause unnecessary health risks in our winter climate. Given the small amount of fuel to be saved, we feel this practice would not be worth the health risks involved." South Dakota also noted that it cannot participate in the EBTR program since it lacks the funds to do so, though Federal funding was avaiable.

The State of Wisconsin offered many suggestions:

It felt that the exclusion of elementary schools entirely from the EBTR regulations was "unnecessarily stringent," and would require many alterations in thermostat settings to accommodate to stricter temperatures where older people were present, and not elementary students.

It also felt that the definition of hospitals should be amended to require that all nonpatient care areas, such as administration offices and lecture rooms, which have separate temperature control devices be required to comply with the EBTR regulations.

Heating and cooling restrictions should be maintained at a minimum of 65 degrees and a maximum of 78 degrees at *any* work station, as opposed to the average of representative work stations. Given the limitations of HVAC systems, this guarantee of temperature levels for each work station would, the State feels, improve public acceptance of the program. Thus the burden of lower or higher temperatures than those allowed under the program due to physical plant limitations would not be placed on employees, "just as plant changes (other than control strategy and proper maintenance), are not required of owners."

Wisconsin agreed with several other commenters that elementary schools should be exempted only during periods when elementary school children are present, and not for other periods of occupancy, except by the elderly. It also felt the exemption for shower use is too restrictive by limiting it solely to schools and workplaces where shower use is not optional, and suggested natatoriums be included.

It observed that opposition to the program was minimal, and that State inspectors found general public acceptance of the program. The cost savings potential, it surmised, was a key factor in building compliance. Wisconsin also noted, however, that despite public service announcements and press releases, "there is still a general lack of public awareness of the program." A key problem was "the failure to provide all covered buildings with an owner compliance booklet; failure to post a certificate accounted for 43 percent of all violations. Future staff efforts will concentrate on booklet distribution."

The temporary nature of the program was also singled out as a problem. It "generated a lack of interest on the part of both building owners and State employees, making it difficult to compete for the time and attention of both. The extension of the program and the proposal to make EBTR a permanent fixture has reduced these problems."

Reduction in the amount of information requested on an inspection report was requested, as was more extensive training of building inspectors in both the EBTR regulations and types of HVAC systems.

Wisconsin concluded with comments on the continuing difficulties of people tampering with thermostats, even with a lock-box protective device.

The municipalities and school districts which provided commentary covered many of these same topics, though additional views were offered.

The City of Houston felt the "EBTR is too complicated and too complex for the average building owner," and suggested "eliminating many of the temperature standards of the EBTR and stressing the operating hour restraints." It also noted that the regulation did not "include provisions for cities and other political subdivisions for funding to enforce their local alternate plan." It recommended that there be established "a procedure for large cities to apply for funds for enforcement in States that do not apply for the funds."

The City of Manchester asked that clarification of temperature readings taken at "breathing level" would be appropriate since it does not cover "students and office workers whose normal breathing level is between three and four feet."

The Legislature of Rockland County noted that many employees used fans and heaters, which "use more energy than readjusting the thermostats to a more realistic temperature." It felt that "discomfort is not only a loss of productivity, but affects morale as well."

The Board of Wayne County Auditors stated that they "do not believe the regulations as written provide for large buildings using radiators and window air conditioners." It concluded that "these systems are not capable of uniform control without major modifications and these systems will not meet the terms and conditions of the regulations as now written."

The Peoria Public Schools "wholeheartedly endorsed the revision of the heating maximum from 65 degrees to 68 degrees." Interestingly, it also joined several States in urging that elementary schools be included in the EBTR regulations, grades 1 through 6. Kindergartens, they felt, should remain at the warmer levels. It was noted that the regulations were directly responsible for savings during the winter season at the Peoria High School, which enjoyed a reduction by 22.8 percent in energy use in the first quarter of 1980 over the same period in 1979, although maintenance and operational changes may account for 5–10 percent of that savings. With respect to cooling temperatures, it recommended cooling no lower than 76 degrees. It noted that its administrative building was cooled last year to 78 degrees, in accordance with the regulations, and that after people "began to dress accordingly, they became generally comfortable in this environment." They estimated that reducing this temperature to 74 degrees would consume an additional 13 percent more electrical energy in the summer months.

The Los Alamos schools noted that the EBTR regulations should be expanded to include all forms of lighting. It noted that "not only are many areas of buildings significantly over-lighted, but there is a tremendous amount of energy waste caused by decorative lighting that is not necessary, and by outdoor advertising at inappropriate times."

Survey of State Opinions

Although 11 States, five cities and two counties provided commentary on the alternate plan proposal, it was felt that it would be desirable to have the views of all the States in order to better advise the Secretary on the desirability of the proposed changes to the EBTR regulations.

Therefore, DOE's Boston Regional Office conducted an informal poll of State Energy Offices on June 27, 1980. Of the 53 offices contacted, 11 were in favor of the proposed alternate plan exemption while 42 were opposed. Of the 24 States contacted which had implemented the program during the first nine-month effort, five favored the change, while 19 were opposed. Of the non-participating States contacted, six were in favor of the change and 23 were opposed.

Seven of the participating States opposed to the change cited its complexity as the reason for their opposition. Five of this group gave as an additional factor its inconsistency with the temperature requirements of the current program, which is already well accepted by the public. Two other participating States opposed to the change said they would prefer that a professsional engineer certify and validate the energy savings projected in alternate plans, and wanted guaranteed Federal training for inspectors.

Significantly, only two of the non-participating States in favor of the change indicated that the change would favorably influence their decision to accept delegation. Two non-participating States opposed to the change indicated interest in submitting a comparable plan, but five non-participating States opposed to the change said that their decision on accepting delegation would not be influenced by the alternate plan proposal. Six non-participating States opposed to the change were opposed to the program in general.

Congressional

On June 26, 1980, members of the staff of the Senate Special Subcommittee on Investigations met with members of the Office of Emergency Conservation Programs, the office charged with the administration of the EBTR program. The Subcommittee staff was concluding an inquiry into the EBTR program's implementation, performance, impact, and compliance experience across the country. Since these revised regulations were scheduled for publication prior to completion of the inquiry, the Subcommittee staff extended the courtesy of reviewing the highlights of the inquiry, to date, and indicating some of their concerns. It was stressed that the staff findings were preliminary, represented only the views of the Subcommittee staff, and had not yet been reviewed by any Members of the Subcommittee.

In general, the preliminary findings of the inquiry were consistent with the observations and findings of DOE's own studies and reports. The Subcommittee staff did raise questions about the effect the proposed alternative plan exemption could have on the continued success of the program. In this regard, they reflected, to a large degree, many of the views presented by the public in the hearing and the written record with respect to potential adverse effects on potential savings, enforcement, administrative cost, and public perception.

III. Summary of DOE Response to Public Comment

Alternate Plan Exemption Proposal

The alternate plan exemption was proposed as an amendment to the regulations as a consequence of suggestions by a number of organizations, principal among them the Building Owners and Managers Association International (BOMA), the National Retail Merchants Association (NRMA), and the National Restaurant Association (NRA). BOMA, in particular, has been of sustained and commendable assistance in implementing the EBTR program from its inception. That fact, together with its acknowledged expertise and nationwide experience in helping to bring buildings of all types into comformance with these regulations, weighed heavily in the decision to consider and publish for comment the concept of an alternate means of complying with the EBTR regulations.

For the many reasons stated in the notice of proposed rulemaking, and addressed above in the public commentary, such a concept has at first hearing an undeniable appeal. Under ideal administrative and compliance conditions, many assert that energy savings equal to or in excess of those being realized by the present regulations might be achieved. This would occur in a more liberal regulatory atmosphere whose enhanced "flexibility" would permit building managers a variety of new options for meeting the intent if not the letter of the present EBTR program, and encourage them to experiment with and initiate a host of lasting and desirable energy conservation measures. An alternate plan would be most appropriate in a "permanent" temperature restrictions program, where building owner/operators could justify major capital expenditures, there was time to plan and install retrofits, and the States and DOE could make careful, adequate inspections for compliance. Not the least of benefits to be accrued from orderly implementation of alternate plans would be opportunities to relieve some of the discomforts engendered by the temperature restrictions. That problem is of considerable interest to restaurateurs, who perceive that part of their service is to provide customer comfort, and who feel that the lack of such comfort may be detrimental to their businesses.

For such reasons, it was apparent that the alternate plan concept had merit sufficient to warrant full scrutiny and public discussion, even under the pressures of an emergency program. This was true despite the fact that DOE realized the appeal of such an approach would by no means be universal among all segments of society, that it represented a notable departure from the original program approved by the Congress (Standby Conservation Plan No. 2), and that it posed administrative dilemmas of severe if not debilitating difficulty. As is reflected in the public commentary, this has proven to be so.

Commentary on the alternate plan exemption was considerable, consumed most of the attention directed to the proposed amendments, and touched upon every advantage and concern. Though frequently thoughtful and informed, it more reinforced than resolved the dilemmas inherent in the proposal. The remedies and administrative procedures proposed represented little in the way of a simple implementation process, and did less to suggest that inspection, enforcement, training, monitoring, and resource requirements attending implementation of the alternate plan approach would offer any but cumbersome operating processes. This fact is clearly reflected in the vast majority of public comments which favored the alternate plan concept, almost without exception, only after attaching the most stringent and severe caveats. There was also strong concern over the base period against which comparable energy savings might be measured, and over what "credits" might be allowed for energy conservation steps and achievements before or after the base period.

In light of this, DOE believes that amendment of the EBTR program to accommodate the proposed alternate plan exemption is inappropriate at this time. We have attempted to communicate the reasoning behind this

decision by summarizing the comments received in considerable detail. In an effort to further establish the basis for that decision, and to place it in perspective, the following discussion is offered.

1. *Documenting Compliance.* At present, building owners and operators can document the circumstances of building compliance by completing and retaining a single, highly simplified Exemption Information Form. Under an alternate plan exemption, that comparatively uncomplicated act would be supplanted by the need to assemble and retain a collection of records required to validate the energy savings accrued through an alternate plan. A wide variety of documents could be required for this purpose, ranging from fuel consumption statistics and utility bills to records of business activity.

Depending on which baseline or consumption period is selected against which to compare energy savings, no small problem in itself, it may be necessary to collect documents reaching back as far as three years. The nature and quality of such data will vary considerably from building to building, and may not necessarily prove that energy measures were in fact taken, or that they achieved the energy savings contemplated. Such doucments would require audit and analysis, rather than mere inspection as at present, and this would likely have to be performed over a period of time at some central facility rather than by an on-site inspector. Aside from complexity, the fact that only a very small fraction of the estimated three million buildings covered by the EBTR regulations would be inspected suggests that an enormous paper work and records burden would be imposed on businesses and building managers and yet may never be utilized by inspection personnel. The propriety of demanding that businesses surrender utility and other documents is not entirely assured; nor would be the confidentiality of such documents, especially as inspections often may be performed by private firms under contract to a State or DOE. The freedom of information and privacy issues would have to be addressed. What is now a straightforward, economical program would be supplanted by a complex, expensive one, for which DOE would need to seek an appropriation from the Congress.

2. *Inspections.* Inspections now require only simple checks on such factors as temperature and humidity levels, thermostat settings and locations, auxiliary heater use and exemption data. Under the alternate plan these would be augmented by the need to examine compliance documentation to verify energy measures and savings. Inspection personnel would have to receive a substantially higher level and different type of training to equip them for these new audit-like functions. It is possible that different people would be required for each function since the skills required to inspect an HVAC system may not be compatible with those required to examine utility, energy, or business records. The continued use of college engineering or science students, for instance, may not be appropriate in auditing records, though it has been for conducting temperature inspections.

The number of inspections conducted would necessarily decline as the complexity and time required to conduct them increases. Building managers would, of necessity, be required to divert time to an inspection to provide or explain compliance documents, or to reproduce them on demand. Presently, inspections may often be conducted entirely without or by only minimally diverting the attention of a building manager. The current successful and often appreciated focus on using inspections as an opportunity to consult with building owners about means of adjusting HVAC systems and building practices to comply with the regulations, and as a "springboard" to educate them on other conservation programs, would be lost as time would permit only that inspection chores be done and documents collected. The loss of this "consultative" quality in favor of the more formal "inspection" focus is viewed by DOE as unfortunate, especially since compliance across the country has been so high.

Finally, it should be noted that a "time lag" of at least a month may occur between the time an inspection is conducted and the results are analyzed and made known to the building manager. Presently an inspector makes this finding and leaves a copy of the inspection report with the building manager at the time of inspection. Such a time lag will seriously delay remedial actions, may represent lost energy savings, and will extend, as a minimum, by triple the present amount of time (2 weeks on the average) alloted to a noncomplying building manager to come into compliance.

3. *Enforcement Presence.* Given the circumstances above, the "enforcement presence" of the program would decline, and media and public perception of the degree to which noncompliance is likely to go uncorrected would not be favorable.

The ability to respond rapidly or to any sizable volume of public complaints of alleged noncompliance (registered, for example, through DOE or State toll-free "Hotline" services) would diminish, as would ability and time available to conduct follow-up inspections where a first inspection yielded either apparent noncompliance or noncompliance resulting from a lack of information about or an understanding of the EBTR regulations. All of this would occur in spite of Congressional concerns that the EBTR's second 9-month period yield a level of enforcement and inspection activity at least equal to the first. It would result in a seriously decreased public visibility for the program during the current "cooling season," and may thus have a deleterious effect on compliance. This would be exacerbated by media coverage, which has been extensive throughout the program, and by "media inspections" of buildings which appear to yield low compliance rates due to an inadequate understanding of the intricacies of HVAC systems and the many ways in which a building may be in compliance.

4. *Energy Savings Estimates and Opportunities.* Although a few (such as BOMA) perceive that relatively uncomplicated formulae and methodologies can be used to estimate energy savings which would have accrued under the present EBTR versus an alternate plan, most commenters strongly felt that such methodologies would prove disparate, complicated, and well beyond the realm of the typical building manager. Even though DOE may recommend certain methodologies, it is unlikely that these would be suitable or available to each of 3 million building managers. The effort to validate such methodologies and calculations would also tax the skills of an inspector who might try to render rapid on-site inspection service, and even those of any central DOE analytical facility. As a consequence, a number of commenters (including State EBTR implementation agencies) recommended a massive program of technical education and assistance, not just for EBTR inspectors and administrators, but building owners and operators as well. Time and resources simply are not available for this purpose. The complexities of analyzing compliance documents, energy savings statistics, and methodologies are such that serious doubts exist as to whether anyone could ever firmly ascertain compliance.

The cost ot building owners of implementing alternate plans, in some instances may also prove prohibitive, especially for smaller businesses or

organizations, such as school systems with limited funds. The extra cost of documenting and analyzing energy use, obtaining the certification of a professional engineer, and altering plant facilities and HVAC systems may discriminate against those unable to afford or obtain funding. This may be compounded by the emergency character of the EBTR program, which has necessarily been imposed at once and without regard to government or business fiscal cycles.

5. *Options and Good Conservation Practices.* It should be noted that the present EBTR regulations, as amended, provide reasonable options to building managers which permit them to operate or adjust HVAC systems in a variety of ways while yet remaining in compliance. A comprehensive array of exemptions is offered for a wide range of health and system-related reasons, and exceptions are provided for both health and economic reasons. Further, lawful application of the temperature measurement provision which allows for the warmest room (when cooling) or the coolest room (when heating) to serve as the "complying room," has helped many in providing more comfortable temperatures to customers and tenants than those nominally prescribed by the regulations. It should also be noted that, despite the discomfort expressed by many, most reports available to DOE continue to stress that most people do adjust to the EBTR temperatures.

An opportunity for implementing the alternate plan concept at the State and local governmental levels already exists through the institution by these agencies of "comparable plans." Under provisions of Section 490.35, any State or political subdivision with an approved comparable plan "may include procedures permitting any person affected by the regulations to use alternative means of conserving at least as much energy in affected buildings as would be conserved by the temperature restrictions." The only proviso is that the comparable plan must be mandatory.

Otherwise, the features of a comparable plan may differ broadly or in detail from the EBTR regulations, may include "procedures for the approval on a building-by-building basis" of alternative means of complying with the comparable plan, and "need not conserve energy in the same fashion as the building temperature restrictions." Since States and local subdivisions have the primary responsibility for administering the EBTR program and developing comparable plans for approval by DOE, DOE believes that it is they who should be urged to consider the incorporation of alternate plan exemptions within comparable plans, and that such an exemption should not be uniformly imposed on all States through an amendment of the EBTR regulations.

Good conservation practices are appropriate at any time, and many may be compatible with the EBTR regulations in achieving significant energy savings. Most such practices would guarantee permanent energy savings which would extend beyond the short life span of this emergency effort. The EBTR was intended as a temporary response to a national energy supply shortage, and was designed to achieve rapid and immediate energy savings through an economical and inexpensive effort with which most building managers could comply without undue distress or cost. While the initiation of additional conservation measures by building managers is a worthy and desirable byproduct of the EBTR program, such is not its essential or legislatively-authorized purpose. The economics and long-term energy benefits of other building conservation measures, especially in these times of costly and uncertain fuel supplies, should be evident and pursued regardless of the EBTR or any other emergency program.

In the vast majority of cases, the EBTR effort is one with which both building owners and other citizens can comply, and chose to do so, particularly since it serves to underscore the reality and persistence of the energy supply problem which engendered it. DOE feels that this forceful, direct, and daily reminder of the unyielding need to conserve energy has in itself substantially enhanced America's appreciation of and efforts toward conservation, and that it should not be altered or diminished.

6. *Simplicity and Public Perceptions.* As many stressed, and as was paraphrased by Erie County, New York, the "key to EBTR's strength is its simplicity." The intent, process, and result of this regulatory program is clearer to building owners and operators than in many programs, and appreciated by the media and the public. The heating and cooling temperature limitations (65°/78° F.) have been well and widely publicized, and serve almost as the sole source of public awareness of building compliance and complaints of alleged noncompliance.

7. *Time and Resources.* Given the complexities and administrative disadvantages of the alternate plan approach discussed above, DOE feels that such an approach cannot be well implemented in the less than six months remaining before the program is scheduled to end. As suggested, altering the rules so substantially and so close to the termination of the program will not serve this effort well, or benefit public perceptions and continued support. Further, grants and contracts to conduct inspections probably will not be concluded until September, allowing little time for inspections and permitting even less for the analysis of building compliance documents which would attend inspections conducted under an alternate plan approach.

Finally, resources are severely restricted, and may not support a level of inspection activity equal to the first 9-month period. Participating States have frequently commented that previous funding was not sufficient, and they are unlikely to expend additional sums implementing and expanding training for the new alternate plan proposal.

In conclusion, DOE believes that the merit of the alternate plan approach is real, but inappropriate to the intent and life span of the Emergency Building Temperature Restrictions, especially as these could, in fact, be rescinded at any time before January 1981. DOE is currently addressing the desirability of proposing legislation to establish a more permanent set of non-residential temperature restrictions, and will consider whether this offers a more favorable context within which to incorporate an alternate approach to compliance.

Other Revisions to the Regulations

490.5 Definitions

The following new or revised definitions have been included as amendments in order to clarify the intent of the regulations.

The definition of "capability for simultaneous heating and cooling" has been further refined by the addition of the words "at the same time," to specify a single HVAC system which may both heat and cool at the same time.

"Coolant" has been defined to specify "the liquid which is circulated through heat exchangers for the purpose of removing heat from the air." Section 490.12 was originally written visualizing chilled water as the coolant. Questions have arisen as to whether § 490.12 is applicable when the refrigerant itself is the coolant. This modification makes clear that this section does apply to such refrigerant systems. In a small number of cases, operation of such systems at a coolant temperature of 55 degrees may create the likelihood of compressor damage. An amendment to § 490.12

permits a higher refrigerant temperature where such likelihood exists.

"Hospital and health care facility" has been redefined to clarify DOE's intent to include doctors' and dentists' offices within the scope of the regulations, unless an exemption is claimed by the doctor or dentist. An exemption is available under § 490.31(5)(i) to any physician or dentist who finds that conditions warrant claiming such an exemption where the health of patients may be endangered.

Since there has been some confusion in the past about which areas of a hospital or health care facility are excluded and which are eligible for exemption, DOE offers the following clarification.

EBTR applies on a building-by-building basis. Three major classes of buildings are automatically excluded: hospitals and health care facilities, elementary schools, and residential buildings. When portions of elementary schools or residential buildings are on separate controls and do not serve the stated elementary school or residential functions, those areas are *not* excluded from the regulations and are expected to comply.

In the case of a hospital or health care facility, this distinction is not drawn. Hospital buildings are completely excluded, even if nonpatient-care areas are within them. However, in a hospital or health-care complex comprising several buildings, only those buildings meeting the definition of "hospital or health care facility" are released from compliance. All other buildings must comply. In cases where this would pose a risk to health, materials, or processes (e.g., some doctors' or dentists' offices, some laboratories) exemptions may be claimed under § 490.31 for those areas.

"Dry-bulb temperature" has been redefined to include "adjusted dry-bulb temperature" as defined in the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 55–74, "Thermal Environmental Conditions for Human Occupancy." This has been done to reduce the chance that an individual will be required by the Regulations to work under conditions thermally less comfortable than those contemplated by the regulations. For example, on a cold day, an individual located near to a large window or exterior wall may sense temperatures below actual room temperature. Adjusted dry-bulb temperature takes into account the effects of unusual radiant heat gain or loss, and air velocity. Since some building owners may wish to avoid the calculations necessary to determine adjusted dry-bulb temperature, use of a globe thermometer to take temperature readings is permitted as an alternative.

In response to the proposed expansion of the definition of "elementary school" to include other areas where children of elementary school age congregate (such as clubs, associations, museums, etc)., the Peoria Public Schools suggested revolving the exclusion for schools serving grades 1–6. Their comment cited substantial savings achieved at the secondary school level due to EBTR. Comment was also received pointing out that the possible results of extending the exclusion to all areas where groups of children meet might exceed DOE's intent. Children attending club or group meetings normally do so for short periods of time, and on a voluntary basis. Where the attendance of children of elementary school age is mandatory, as in schools, the exclusion applies. Extra-curricular activities or school trips are optional and occur during short time periods, when the disparity between school and club temperatures, if it exists, can easily be anticipated and accommodated. Therefore, the proposed amendment extending an exclusion from the EBTR restriction during such periods has been withdrawn.

Several commenters stated that when an elementary school building is unoccupied or used for functions attended by individuals above the sixth grade, it should be covered by the temperature restrictions. Such a change would be of a scope great enough to necessitate presentation as a proposed, rather than a final rule. Although during such times the elementary school building is still excluded from the regulations, DOE takes notice of comment received from all sectors citing significant savings attributable to the night-time temperature setback restrictions and the hot water temperature restrictions. Businesses have reported this strategy as a standard procedure in the past, and the energy benefits of such actions have been documented during the EBTR effort. Although it is not a requirement, DOE takes this opportunity to urge adoption of reduced temperatures in elementary school buildings during the times that children are not in attendance.

The National Education Association requested further clarification of the definition of "elementary schools" to ensure that non-classroom areas of grammar schools (e.g., cafeteria, gymnasium, auditorium, etc.) qualify for the same exclusion from EBTR. DOE refers to the definition of "elementary school" to point out that classrooms have never been specified as the only areas within an elementary school building or complex covered by the exclusion.

"Energy that would otherwise be wasted" has been defined in order to clarify that term as used in § 490.18.

A definition has been added for "intermediate season" since it is necessary to describe those times when both heating and cooling may be required in a building at different times during the same day (e.g., heating in the morning and cooling in the afternoon). "Intermediate season" also refers to those periods when heating and cooling are required at the same time in different parts of the building. This may be the case, for example, in a large office building which, in winter, may require heating near the perimeter due to radiant heat loss, but cooling in the interior rooms due to core heat buildup.

"Reheat" has been defined to clarify the type of system operation prescribed by the regulations.

"Solar energy" has been redefined to specify the types of renewable resources intended to be encompassed by this term. These include wind, geothermal, small scale water power, or biomass resources, including wood and any combustible municipal or industrial trash or waste materials.

The definition for "unoccupied period" has been refined to specify that a building must be unoccupied for eight hours or more to be considered "unoccupied" for purposes of these regulations.

The Nevada Classified School Employees Association (NCSEA) has submitted comment on the definition of "occupied period" which pointed out that by excluding the time when "such service functions as cleaning and maintenance" were being performed from the period when a building could be considered to be occupied for heating and cooling purposes, DOE has possibly created a situation which could be unhealthy for service personnel. The purpose of the "service functions" provision was to prevent heating or cooling an entire building when only a small number of persons were present, especially when their work could be accomplished in the period following the normal work day when temperatures would be most like those during the normally occupied period.

NCSEA stated, however, that this provision would not allow building managers to provide reasonable temperature and/or ventilation levels for employees who perform tasks over a period longer than only that right after the close of the work day, such as custodial or maintenance personnel working normal eight hour days during a

school's summer vacation period or working extensively on weekends.

It was not the intent of the Department to prevent heating or cooling under such conditions. Therefore, the qualifying statement which excludes service functions from the definition of "occupied period" has been removed, although DOE would like to continue to urge building managers to schedule ordinary service functions as close to or during the occupied period as possible in order to realize the greatest energy savings available and still provide reasonably comfortable temperatures for personnel. It should also be noted that DOE encourages the use of ventilating equipment during this thermal buffer period as a means of providing more comfort or protection (from such problems as strong cleaning fluid fumes), where such equipment can be controlled separately from the heating and cooling systems.

A definition has been added for "work station" as that area within a room where an employee ordinarily performs principal work-related tasks. This new definition was necessitated by changes in allowable temperature measurement techniques. It refers to primary work areas (e.g., a typist's desk or a factory bench) and not to any area of a room where tasks may occasionally be performed.

490.12 HVAC Systems With Capability for Simultaneous Heating and Cooling

This section has been amended to distinguish between the types of systems referred to in § 490.12(b)(1) (fan coil, induction, baseboard or similarly operated units) and those referred to in § 490.12(d)(1) ("all-air" systems). Fan coil, induction, baseboard or similarly operated units are those in which cooling or heating of the air in the room is accomplished by passing room air over a heat exchanger in the room to which water or another fluid has been piped. In an all-air system, air which had previously been heated or cooled elsewhere in the system is carried into the room through ducts.

It was proposed to revise § 490.12 to state definitely that the use of reheat is banned by these regulations except where necessary to maintain adequate temperature control. Because of questions on the meaning of "adequate control" this paragraph has been made more specific establishing a minimum temperature of 65 degrees in any occupied building which is being maintained generally at a higher temperature as prescribed elsewhere in the regulation.

If temperatures below 65 degrees F. are encountered in some occupied parts of a building being cooled to an approved temperature, i.e., to 78 degrees F. or higher or to a lower temperature permitted by claimed exceptions and/or approved exceptions, the temperature of the cold rooms may be raised to 65 degrees by opening a window, use of a portable electric heater, use of reheat, or by any other method.

Where reheat is the selected method, the operating technique applicable to the intermediate season is described in the new §790.12(e)(3). No operating technique applicable to the cooling season is set forth because under "cooling season" by definition no heating is taking place. If space temperatures below 65 degrees are encountered in some part of the building when an attempt is being made to cool the building to a permitted level, the building owner/operator will ordinarily supply heat to the cold spaces as permitted under § 490.12(a)(1) and thereby immediately establish a conversion to the intermediate season.

A number of commenters proposed additional exceptions to the prohibition of reheat: when the heat energy is recovered energy; in hospitals; to maintain building service system safety and intergrity and prevent condensation; to prevent growth of mildew, mold, and fungi; and in libraries, museums, etc., where humidity control is essential for the preservation of materials.

DOE maintains that the use of reheat is almost always wasteful of energy. When any building or portion thereof is being cooled, heating of the recirculating air or the incoming outside air regardless of the source of this heat must necessarily increase the load on the air conditioning equipment and waste energy. When no cooling is being produced, use of the heating element is permissible. The other exceptions proposed above are already included in the regulations as exclusions or exemptions: hospitals are excluded; excessive humidity levels (i.e., above 65 degrees dew point at 78 degrees F.) can be countered because § 490.12(a)(2) permits lower dry bulb temperatures; building damage due to condensation or growth of mold, mildew, or fungi can be a valid basis for claiming an exemption under § 490.31(a)(6); and museums, libraries, and archives also may be exempted under § 490.31(a)(4).

Present EBTR regulations provide alternative ways to comply with cooling season room temperature restrictions. One of the options available is to limit coolant temperature to 55 degrees or higher. DOE has also received reports that in a small number of systems, compressor surging could result from limiting coolant temperatures to those required by the regulations. The amended regulations allow operation of these systems at temperatures below 55 degrees, but only if necessary to prevent equipment damage. Where any doubt exists that equipment will operate satisfactorily at specified coolant temperature, DOE recommends consultation with the compressor manufacturer.

Section 490.12 has been further revised to clarify proper HVAC operation during the intermediate season. The effect of this revision is to confirm that in the intermediate season a "deadband" between 65 degrees and 78 degrees exists in which no energy may be consumed in heating or cooling a room except to the extent that temperatures below 78 degrees can be attained with 55 degree coolant temperatures or 60 degree supply air, as stipulated in § 490.12. This is not intended to preclude system operation at any time under exemptions available in § 490.18, including the use of outside air.

490.13 Requirement for Accuracy of Space-Conditioning Control Devices

In order to prevent the relocation of thermostats to thwart the intent of these Regulations, an amendment prohibiting such relocations has been added. With this revision, it would be a violation of the regulations to move a room thermostat from an interior to an exterior wall, or from an occupied room to a storage area in the same thermostat zone, for example, with the intention thereby of raising or lowering temperatures in the occupied room.

This section has been further revised to require that space-conditioning control devices be maintained in proper repair, if such devices are being used to maintain temperatures required by these regulations.

One commenter reported that in hotel meeting rooms thermostats were being "jimmied" by guests to achieve more comfortable temperatures. Such action is prohibited by § 490.13(b) which reads "no person may alter or relocate a space conditioning control device to thwart the intent of these regulations, or to bring about room temperatures prohibited elsewhere in these regulations."

490.14 Regulation of Building Temperatures During Unoccupied Periods

A number of buildings utilizing heat pump systems have experienced increased energy usage by complying with EBTR night temperature setback requirements due to an inability to bring building temperatures back up to occupied period temperatures without

an excessive use of electrical resistance elements. An amendment has therefore been added which exempts such systems from the 55 degree night setback requirement and raises the setback level for those systems to 60 degrees if such operation will reduce monthly energy consumption or peak load use. One commenter pointed out that the 60 degree setting would be inappropriate where the temperature during the occupied period was not 65 degrees F. It was recommended that the setback be described as a differential, i.e., as the difference between the temperature held during the occupied period and the temperature held during the unoccupied period. Specifically, a five degree setback was recommended. In the interest of uniformity within and among buildings heated by heat pumps, DOE prefers that in all such buildings and parts thereof during the unoccupied period a temperature no higher than 60 degrees F. is to be maintained whenever the building owner/operator is convinced that the 55 degrees F. limit would result in higher consumption of energy or higher monthly electricity bills. One commenter suggested that buildings using heat pump systems be exempted from temperature restrictions during unoccupied periods. DOE disagrees believing that the 60 degrees F. temperature limit for unoccupied periods will in most cases result in energy savings. Accordingly, the proposed change in the regulations has been adopted.

During the course of the EBTR program, and in the public comment addressing the proposed amendments, a need to allow pre-heating and pre-cooling for some buildings so that temperatures reach regulation level when occupants arrive was identified. DOE would like to point out that under § 490.14(a)(4)(ii) this is already permitted for both heating and cooling. In addition, the amended definition of "dry-bulb temperature" allows temperature measurement to be adjusted for the radiant heat effect which can be significant during the start up of heating and cooling systems.

490.15 Auxiliary Heaters

Several comments were directed to the use of auxiliary heaters. The regulations have been amended to make clear that the use of auxiliary heaters is prohibited, except where necessary to bring the temperature in a room or at a work station (e.g., desk, work bench) up to 65 degrees. No auxiliary heaters may be used to bring the temperature at a work station above 65 degrees, except where permitted by an exemption or exception. Electric foot warmers and similar devices are not specifically proscribed by the regulations unless their use brings the room or workplace temperature above 65 degrees. Care should always be taken to keep flammable materials away from auxiliary heaters or other electrical devices when these are in use.

When the bulk of a building or portion thereof is maintained at a temperature below 65 degrees and only a small area is occupied, the use of portable heaters can save appreciable amounts of energy. When, however, an attempt is made to keep the entire space at 65 degrees, but the temperature falls significantly below this level in certain areas, it is apparent that some improvement to the building envelope (e.g., installation of storm windows or doors, more insulation) or to the HVAC system is needed. Such improvements are preferable to the use of portable heaters.

490.17 Measurement Techniques

Section 490.17(a) states that the temperature in any one of several rooms controlled by the same space conditioning control device may be measured to indicate compliance with the regulations. At the suggestion of the Department of Defense, wording has been added to preclude temperature measurements being taken for compliance purposes in rooms which do not contain work stations (e.g., file rooms, broom closets, storage areas) in order to attain more comfortable temperatures in other, normally occupied, rooms.

Allowable measurement techniques have been modified to allow temperature measurement at an average of representative work stations in a room (see Definitions, § 490.5). The nature of some HVAC systems, room size, or demands of business may make the temperatures at various work stations widely at variance with the average room temperature. When rebalancing the system does not correct the situation and/or relocating the work station is not feasible or is ineffectual, room temperatures may be measured by averaging the temperatures at representative work areas in the room. This will afford some relief to individuals at those work stations. The building owner/operator may choose the measuring technique to be used.

Several comments were directed at the vagueness of the proposed temperature measurements strategy which allows the average of readings taken at "representative" work stations to be a determination of compliance. One request was made to require all work areas to be measured and averaged. Another asked DOE to permit temperature measurements at the coolest work station when heating and the warmest one when cooling, analogous to § 490.17(a).

DOE answers the first suggestion by pointing out that such a requirement would be unreasonable in rooms where the extreme temperatures of a zone were easily identified and/or where the room contained more work stations than could be measured practicably (e.g., large factories, department stores, offices).

Although the second suggested strategy is based on the same reasoning already approved for determining compliance between rooms, the conditions are dissimilar. It is often easier to equalize the temperature within a room by using fans, relocating work stations, etc., than to do so between rooms. When wide differences in temperatures within a room prevail and cannot be corrected, the building owner/operator may apply for an exception.

With regard to room temperature measurements, the proposed amendment specified that readings "shall be taken at normal breathing level or between four and six feet from the floor." The term "normal breathing level" was included by way of justifying the reasonableness of the four to six foot height. Several commenters pointed out that for some individuals sitting down, especially children, breathing level is less than four feet from the floor. DOE should perhaps have included other justifications, such as: (1) The 4'–6' elevation is consistent with the elevation of most room thermostats which are typically located about 60" or 66" from the floor, (2) thermometers and thermostats at 4'–6' height are easily read and adjusted, and (3) the 4'–6' elevation is approximately midway between the floor and ceiling in a typical office building.

Since the term "normal breathing level" apparently suggests to some commenters a greater flexibility in the height of temperature measurement than DOE intended, this term has been deleted from the amended regulations, leaving temperature measurements specified simply as between 4' and 6' from the floor.

The regulations also have been amended to require that HVAC systems be properly balanced. System balancing in accordance with good commercial practice for the applicable HVAC system is crucial if the full energy saving potential of EBTR is to be realized.

A number of commenters discussed the balancing of distribution systems. One asked that a precise definition of the term be included while another

expressed the view that balancing was expensive and did not "belong" in EBTR. Another recommended re-balancing systems every two years in accordance with the requirements of the Associated Air Balance Council National Standards.

DOE prefers not to define "balancing" precisely or to specify the permissible temperature "spread" among rooms since the degree of balance obtainable will vary depending upon type of HVAC system, weather conditions, and other factors. For example, one cannot expect an antiquated steam heating system to maintain the same uniform temperatures throughout a building that a modern sophisticated computer controlled system provides.

Proper system balancing requires the services of knowledgeable people. In many buildings the building superintendent can do a creditable job, but in other buildings it may be desirable to engage specialists. Any reasonable costs incurred probably will be recovered through energy savings and the building owner should not be injured by the balancing requirement.

Several commenters noted that in humid regions of the United States the 65 degree dew point level required by the regulations (at 78 degrees F.) can result in mold, mildew and fungal growth. Several buildings were said to have been damaged by mold, and human discomfort has also been reported.

DOE has not received any documentation which identifies a particular building where fungi, mildew, or mold growth has occurred as a result of maintaining a 65 degree dew point. We have contacted a number of universities seeking an authoritative opinion on the growth of molds, mildew, and fungi in buildings, but without success.

The John B. Pierce Foundation Laboratory of New Haven, Connecticut, called our attention to a paper entitled "Controlling Moisture in the Home" by G. W. Brundett of the Electricity Council Research Center in Capenhurst, Chester, United Kingdom. In this paper the following statement appears: "The time for spores to germinate varies widely with temperature and relative humidity. Below certain relative humidities, usually 70%, the spores will not germinate. All houses contain a wide variety of species of mold spores which develop best over a range of temperatures. Other molds behave similarly although the optimum temperature varies with type."

Without more field and laboratory data than DOE now possesses, we cannot determine whether or not a change in dew point limit is desirable to control mold, mildew, and other growths.

Whether or not the change can be justified on human comfort grounds is also unclear. Two senior individuals from different, but highly respected, research organizations performing research in the human comfort area said the 65 degree dew point temperature limit was not acceptable and should be changed to 62 degrees. Two other similarly well qualified researchers affiliated with other organizations said that the 65 degree dew point level was quite reasonable and no change to the regulations was necessary. A similar diversity in viewpoint was held by the two HVAC consulting engineers contacted. One recommended changing the 65 degree limit to 62 degrees. The other recommended against doing so.

An unpublished revision of ASHRAE Standard 55–74, *Thermal Environmental Conditions For Human Occupancy*, contains language substantially as follows: "In the zone occupied by sedentary or near sedentary people the dew point temperature shall not be less than 1.7 degrees C. (35 degrees F.) or greater than 16.7 degrees C. (62 degrees F.)." DOE notes that changing the dew point temperatures is a significant change in the regulations which should not be made without first issuing a notice of proposed rulemaking to solicit public comment on the matter.

409.18 Exemptions from heating and cooling restrictions

The Minnesota Energy Agency objected to DOE's proposal to exempt HVAC systems where cold well water is used directly as the coolant, arguing that unless the well water were pumped by windmill and re-used in irrigation the exemption could encourage wasteful use of water. Use of cold well water directly as the coolant allows air conditioning to be accomplished without consumption of fossil fuels except for the fuel used to produce electricity for water pumping, and the use of pump power is permitted under § 490.16. DOE feels that exempting HVAC systems utilizing cold well water, however pumped, is logical and is consistent with the intent of § 490.18(a) (2) and (3). Prohibition of wasteful use of water is more properly a concern of local laws.

490.23 Maintenance of hot water temperature control devices

This section has been revised to require that domestic hot water temperature control devices be maintained in proper repair, if such devices are being used to maintain temperatures required by these regulations.

490.24 Exemption from hot water restrictions

Water temperatures in excess of 105 degrees F. are in many instances necessary to remove fat and grease deposits on equipment such as utensils, scales, slicing machines and cutting blocks used in meat markets, delicatessens, and other food stores. Unless such deposits are removed, bactericidal chemicals cannot effectively sanitize the equipment. A "Model Retail Store Sanitation Ordinance" will soon be published by the Federal Drug Administration. It specifies water temperatures for the various applications in the range 75–180 degrees F. State and local governments have promulgated regulations governing dishwasher water temperature and appropriate provision for this fact has been made in 4901.24(b). Very few jurisdictions, however, have promulgated regulations dealing with the temperature of water employed in food stores. A food store may properly claim exemption from the 105 degrees water temperature under § 490.24(a) of the present regulations since food preparation and dispensing can reasonably be construed as a commercial process. Many food stores are not aware of this interpretation. To deal with this matter, the wording of § 490.24(a) has been revised to make clear that the 105 degree water temperature restriction does not apply to those portions of covered buildings where higher temperatures are needed to properly clean food handling and dispensing equipment.

The water temperature employed however, must be no higher than necessary to do a proper cleaning job.

An amendment also has been added which exempts from coverage by the regulations individuals who are required by security, safety, or health regulations to wear special or protective clothing to perform manufacturing or industrial processes, when temperatures prescribed in the regulations would pose a danger to their health. Two commenters noted that in some instances employers may require special clothing that is not required by government security, safety, and health codes, and suggested changing the word "codes" in the proposed rules to the word "reasons." DOE feels that the word "regulations" better communicates the type of authoritative guidance which properly supports the exemption, and will insure that standard industry procedures as well as statutory requirements are encompassed in the

amendment. For example, this exemption would cover areas where individuals are required to wear impermeable coveralls due to possible exposure to fiberglass, radiation, fine dust, spray paints, etc. In other instances, high security or safety risks exist that prevent individuals from wearing needed layers of clothing to retain warmth (e.g., U.S. mints, activities where there are high risks of clothing being caught in machinery).

An amendment has been included exempting school and workplace shower and changing rooms from heating limit requirements where showers are a part of customary work procedure. The primary purpose of this amendment is to exempt workplace shower and changing areas only in cases where exposure of workers to potentially dangerous or irritating substances, such as coal or other mining dust, toxic chemicals, excessive grime, etc., would make it impractical or unhealthy for workers to leave the workplace before showering. This amendment is not intended to exempt shower and changing rooms in gymnasia, health clubs, or similar establishments, where showers on the premises are optional, except those associated with a senior citizens facility exempted under the exemption for such facilities.

General Motors Corporation and the American Iron and Steel Institute jointly reported that the change would permit industry to comply with labor contracts as well as with Federal Mine Health and Safety regulations, which require that bath houses be "adequately heated." Several commenters took exception to the qualifying phrase in the proposed rule "where showers are considered a required part of customary work or school procedure." A coal company pointed out that showers are "recommended" to miners but not required. A large chemical company reported that it also "recommended" showers but did not ordinarily require them, adding that a "requirement" is usually considered a work rule or condition of employment, the violation of which can be cause for dismissal. On analysis, it seemed reasonable to delete the words "considered a required" from § 490.31(a)(5)(v).

Senior citizen centers providing nutritional, recreational, and other services specifically intended for use by senior citizens have been exempted from compliance with the regulations to the level of 70 degrees during those times and in those areas where senior citizen activity is being conducted. This amendment incorporates a class exception from the regulations previously granted by the DOE Office of Hearings and Appeals to such facilities. The danger of accidental hypothermia does not appear to be a potential problem in the workplace since work activity would tend to keep people warm, and co-workers would likely recognize such symptoms and offer aid. However, the National Institutes of Health has recommended that temperatures be maintained at no lower than 70 degrees F. for the elderly, particularly the infirm, in their residences, since the danger of accidental hypothermia is greater for those living alone and/or whose level of physical activity is diminished. In any event, EBTR does not apply to private residences.

Although DOE was criticized for not defining an age group for the senior citizen exemption, DOE feels this omission was justified. Investigation into what is considered a standard, accepted age at which one becomes a "senior citizen" yielded a wide range of results from government and private agencies, benefit programs, medical authorities, and senior citizens themselves. Further, States responsible for implementing the EBTR regulations may have individual standards for identifying senior citizen activities. Therefore, "senior citizen" has not been defined.

490.34 Scope of exceptions or exemptions

The proposed amendment to this section required building owners or operators to provide temperature levels consistent with the needs of exempted or excepted building areas, businesses, systems, or individuals. Several commenters pointed out that such a requirement attempts to enforce temperatures other than those prescribed by the EBTR regulations. Thus, the wording of this section has been changed to encourage building owners and operators to fulfill their obligations to tenants and employees, whose claim to an exemption is valid, at the earliest practicable moment, especially in cases where the health of tenants, employees, or occupants may be in jeopardy. Such adjustments also should be made whenever possible in a manner consistent with maximum energy savings. For example, it may be more energy efficient to provide one individual granted an exception with a space heater than to adjust an entire HVAC zone to the temperature permitted by the exception.

Due to an inadvertent reversal in the wording of the concluding paragraph in § 490.34, an erroneous statement was made in the preamble to the proposed amendments. DOE would like to clarify here that nothing in these regulations is intended to imply that DOE requires temperatures above 78 degrees F. for cooling, or below 65 degrees F. for heating.

490.43 Posting of Certificates of Building Compliance

When the manual, *How to Comply With the Emergency Building Temperature Restrictions* was published in August 1979, it contained all the forms needed to comply with the EBTR program. Included was a Certificate of Building Compliance, which the regulations required be posted in a prominent location in every covered building. Those certificates continue to be valid, whether they are drawn from the original four-color printing, the reprint in blue, or a photo reproduction. They do not have to be replaced with any new certificate. Any building owner/operator who lacks the Certificate of Building Compliance, or needs additional copies, should request one or more copies by calling the toll-free Emergency Conservation Service Hotline at the telephone numbers shown at the beginning of this notice. In accordance with § 490.43(a)(1), such certificates must be promptly posted in a prominent location within each covered building. If a building owner or operator is claiming an exemption based on an amendment to the regulations, he should take the appropriate steps under § 490.43 within 30 days of the effective date of these regulations.

Environmental requirements

The Department of Energy has reviewed the Emergency Building Temperature Restrictions Program pursuant to its responsibilities under the National Environmental Policy Act (NEPA). In July 1979, the Department determined that the program did not constitute a major Federal action significantly affecting the quality of the human environment. This determination was based upon information which indicated that the changes in building temperatures required by the program regulations would result in very minor positive impacts on national air quality (less than one percent for all pollutants); negligible changes in emissions for water pollutants and solid wastes; and no detrimental effects on public health. The subject final rulemaking does not alter any substantive aspects of the existing program, but rather revises and clarifies certain technical details. It is the Department's judgment that this final rule does not contain any aspects which would alter the previous

determination regarding the lack of significant environmental impacts from the Emergency Building Temperature Restrictions Program. Therefore, an environmental impact statement is not required to support this action.

In consideration of the foregoing, Chapter II of Title 10 of the Code of Federal Regulations is amended as set forth below. Issued in Washington, D.C. on January 19, 1981.

(Federal Energy Administration Act of 1974, (15 U.S.C. 761 et seq.); Energy Policy and Conservation Act, as amended, (42 U.S.C. 6201 et seq.); Department of Energy Organization Act, 42 U.S.C. 7101 et seq.; E.O. 11790, 39 FR 23185 (June 27, 1974); E.O. 12009, 42 FR 4627 (September 15, 1977); Standby Conservation Plan No. 2, Emergency Building Temperature Restrictions, 44 FR 12906 (March 8, 1979); E.O. 11912, 41 FR 15825 (April 13, 1976); Presidential Proclamation No. 4667, 44 FR 40629 (July 12, 1979); and Presidential Proclamation No. 4750, 45 FR 26019 (April 17, 1980))

T. E. Stelson,

Assistant Secretary, Conservation and Solar Energy.

PART 490—EMERGENCY BUILDING TEMPERATURE RESTRICTIONS

10 CFR Part 490 is amended as follows:

1. Section 490.5 is amended by revising paragraphs (a), (g), (n), (p), (y), and (dd) and adding new paragraphs (ff), (gg), (hh), (ii), and (jj).
2. Section 490.12 is amended by revising paragraphs (a), (b)(1), (d), and (e).
3. Section 490.13 is amended by revising paragraphs (a) and (b).
4. Section 490.14 is amended by adding paragraph (a)(5).
5. Section 490.15 is amended by adding a sentence at the end thereof.
6. Section 490.17 is amended by revising paragraphs (a) and (c) and adding paragraph (d).
7. Section 490.18 is amended by revising paragraph (a)(2).
8. Section 490.23 is amended by revising paragraph (a).
9. Section 490.24 is amended by revising paragraph (a).
10. Section 490.31 is amended by revising paragraph (a)(5) and adding a new paragraph (a)(7).
11. Section 490.34 is amended by rewording it.

For the convenience of the reader, Part 490, as amended, is set forth in its entirety as follows:

PART 490—EMERGENCY BUILDING TEMPERATURE RESTRICTIONS

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Authority: Federal Energy Administration Act of 1974, (15 U.S.C. 761 et seq.); Energy Policy and Conservation Act, (42 U.S.C. 6201 et seq.), as amended; Department of Energy Organization Act, (42 U.S.C. 7101 et seq.); E.O. 11790, 39 FR 23185 (June 27, 1974); E.O. 12009, 42 FR 4627 (September 15, 1977); Standby Conservation Plan No. 2, Emergency Building Temperature Restrictions, 44 FR 12906 (March 8, 1979); E.O. 11912, 41 FR 15825 (April 13, 1976); Presidential Proclamation No. 4667, 44 FR 40629 (July 12, 1979); and Presidential Proclamation No. 4750, 45 FR 26019 (April 17, 1980).

Subpart A—Scope and Definitions

§ 490.1 Scope.

Except as otherwise provided in this part, this part applies to covered buildings in each state or political subdivision thereof, and shall supercede any law of any state or political subdivision thereof or any Federal order, regulation or directive, to the extent such law, order, regulation or directive is inconsistent with these regulations or any guidelines or orders issued pursuant thereto.

§ 490.2 Effective date.

These regulations first took effect on July 16, 1979, and, by Presidential Proclamation of April 15, 1980, will continue to be effective through January 16, 1981. The regulations may be terminated or suspended by the President at any time.

§ 490.3 Authority to contract or delegate.

DOE may delegate or contract for the carrying out of all or any part of the functions under this part.

§ 490.4 Authority to issue orders and guidelines.

DOE may issue such orders and guidelines, and may make such adjustments, as are necessary to administer and implement the provisions of these regulations.

§ 490.5 Definitions.

(a) "Capability for simultaneous heating and cooling" means an HVAC system that can supply heating to one part of the space-conditioning equipment while at the same time supplying cooling to another, including but not limited to dual-duct, reheat, recool, multizone fans, fan-coil units in combination with central air and induction units in combination with central air.

(b) "Cooling season" means those periods when the HVAC system in a covered building is operated such that no space heating is being used in that building.

(c) "Covered building" means every building or portion of a building, but excludes residential buildings, hotels or other lodging facilities, hospitals and health care facilities, elementary schools, nursery schools and day-care centers, and such other buildings and facilities as the Secretary may by rule determine: *Provided,* That to the extent that the non-sleeping facilities of a hotel, motel or other lodging facility have space-conditioning control devices separate from the sleeping facilities, the non-sleeping facilities are not excluded from the definition.

(d) "Dew point temperature" means the temperature at which condensation of water vapor begins as the temperature of the air-vapor mixture is reduced. When the dry-bulb temperature equals the dew point temperature, the relative humidity is 100 percent.

(e) "DOE" means the Department of Energy.

(f) "Domestic hot water" means hot water which is intended for use in covered buildings for personal hygiene or general cleaning.

(g) "Dry-bulb temperature" means the temperature of air as measured by a dry-bulb, or ordinary thermometer which directly measures air temperature. Where unusual radiant heat gain or loss, or where unusually high air velocity conditions prevail, an adjusted dry-bulb temperature may be calculated in accordance with American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 55–74 Thermal Environmental Conditions for Human Occupancy. Alternatively, Temperature may be read directly using a Vernon-type globe thermometer.

(h) "Elementary School" means any school which has any grades kindergarten through sixth grade, provided, that if the non-elementary grade portions of a building have space-conditioning control devices separate from the elementary portions, the non-elementary grade portions are not included within the definition of elementary school.

(i) "Fuel distributor" means any person who delivers oil or other fuel for use in a covered building.

(j) "Heating season" means those periods when the HVAC system in a covered building is operated such that no space cooling energy is used in that building.

(k) "Humidity" means a measure of the water-vapor content of air.

(l) "HVAC" means Heating, Ventilating and Air Conditioning.

(m) "HVAC System" means a system that provides either collectively or individually the processes of space heating, ventilating and/or air conditioning within or associated with a building.

(n) "Hospital and health care facility" means a building such as a general hospital, tuberculosis hospital or any other type of hospital, clinic, nursing or convalescent home, hospice or other facility duly authorized to provide hospital or health care services under the laws of the jurisdiction in which the institution or facility is located, but does not include the offices of physicians, dentists and other members of health care professions licensed by the State to provide health related services, which are not located in such a building.

(o) "Hotel or other lodging facility" means a building where sleeping and lodging accommodations are provided to the public, or to the members of a private membership organization or other private facility, in the ordinary course of business.

(p) "Occupied period" means that time of the day or night when the covered building or portion thereof is used for its ordinary function or functions.

(q) "Operator" means any person, whether lessee, sublessee or assignee, agent or other person, whether or not in physical possession of a covered building, who has control, either directly or indirectly through an agent, of heating, cooling or hot water equipment servicing the covered building.

(r) "Owner" means any person, whether or not in physical possession of a covered building, in whom is vested legal title, and who has control, either directly or indirectly through an agent, of heating, cooling or hot water equipment servicing the covered building.

(s) "Person" means any individual, corporation, company, association, firm, partnership, society, trust, joint venture, or joint stock company, the United States or any State or political subdivision thereof, the District of Columbia, Puerto Rico, any U.S. territory or possession, or any agency of the United States or any State or political subdivision thereof, or any other organization or institution.

(t) "Public utility" means a publicly or privately owned and operated utility which is engaged in the sale of electric power or natural gas to end-users.

(u) "Relative humidity" means the ratio of the amount of water vapor in the air at a specific temperature to the maximum water vapor capacity of the air at that temperature.

(v) "Residential building" means any building used for residential purposes but does not include any portion of such building used for commercial, industrial or other business purposes and which, with respect to the heating and cooling requirements of these regulations, has separate heating or cooling space-conditioning control devices or, with respect to water temperature restrictions, has separate hot water temperature control devices.

(w) "Room" means that portion of the interior space which is contained within the exterior surfaces of a building, which is contained within floor to ceiling partitions, and which is conditioned directly or indirectly by an energy using system.

(x) "Secretary" means the Secretary of the Department of Energy.

(y) "Solar Energy" means energy derived from the sun directly through the solar heating of air, water and other fluids; indirectly through the use of electricity produced by solar photovoltaic or solar thermal processes; or indirectly through the use of wind, geothermal, small scale water power or biomass, including wood, and any combustible municipal or industrial trash or waste materials.

(z) "Space-conditioning control device" means a device for directly or indirectly controlling the room temperature and/or humidity by means of the HVAC system.

(aa) "Special equipment" means equipment for which carefully controlled temperature levels are necessary for proper operation or maintenance.

(bb) "State" means any State, the District of Columbia, Puerto Rico, or any territory or possession of the United States.

(cc) "Temperature control device" means a thermostat or any other device used to regulate the operation of heating or cooling equipment or a hot water heater.

(dd) "Unoccupied" means those periods eight hours or longer of the day or night other than the occupied period.

(ee) "Wet-bulb temperature" means the temperature of air as measured by a wet-bulb thermometer, which is a thermometer having the bulb covered with a cloth, usually muslin, that is saturated with water.

(ff) "Coolant" means the liquid which is circulated through heat exchangers for the purpose of removing heat from the air. The coolant may be circulating water, refrigerant itself, or another fluid.

(gg) "Energy that would otherwise be wasted" means any heating energy rejected by any equipment of process, which can be employed directly or indirectly to provide for space heating or cooling or for domestic water heating without increasing the load on the original equipment.

(hh) "Intermediate season" means any time when both heating and cooling are being supplied to the entire building, but at different times on the same day, or are being supplied at the same time to different spaces in the building.

(ii) "Reheat" means the process of first cooling supply air and then raising the temperature again, by passing it over a heated surface or by mixing with warm air or by any other method, before introduction into living space.

(jj) "Work station" means the location within a room where an employee ordinarily performs his or her principal work related tasks.

Subpart B—Heating and Cooling Restrictions

§ 490.11 HVAC systems without capability for simultaneous heating and cooling.

In covered buildings with HVAC systems without the capability for simultaneously heating and cooling the building:

(a) No operator shall set space-conditioning control devices so that energy is consumed to raise the room dry-bulb temperature above 65°F;

(b) No operator shall set space-conditioning control devices so that energy is consumed to lower the room dry-bulb temperature below 78°F: *Provided,* That energy may be consumed to lower the room dry-bulb temperature below 78°F to the extent necessary to lower the room dew-point temperature to 65°F.

§ 490.12 HVAC systems with capability for simultaneous heating and cooling.

In covered buildings with HVAC systems capable of simultaneous heating and cooling of the building or portions thereof, operators shall set space-conditioning control devices in accordance with the following requirements:

(a)(1) Except as otherwise provided in this section, no operator shall set space-conditioning control devices so that energy is consumed to raise the room dry-bulb temperature above 65°F.

(2) Except as otherwise provided in this section, no operator shall set space-conditioning control devices so that energy is consumed to lower the room dry-bulb temperature below 78°F: *Provided,* That energy may be consumed to lower the room dry-bulb temperature below 78°F to the extent necessary to lower the room dew-point temperature to 65°F;

(3) During the intermediate season, at those times or in those areas where heat is being supplied to a room, operators of HVAC systems must comply with the requirements of paragraph (a)(1) of this section. During the intermediate season, when cooling, operators must comply with the requirements of paragraph (a)(2) of this section, or alternatively with paragraph (b)(1)(ii) of this section for operators of fan-coil, induction, baseboard, or similarly operated units, or paragraph (d)(1)(i) of this section for operators of "all-air" systems.

(b)(1) Operators of systems where the cooling or heating of room air takes place in equipment located in the occupied space (fan coil, induction, baseboard or similarly operated units) shall set space-conditioning control devices in accordance with the requirements of paragraph (a) of this section, or alternatively in the following manner.

(i) No heat is provided to the heating coil during the cooling season,

(ii) No liquid coolant is provided to the cooling coil at coolant temperatures below 55°F, and

(ii) No heat is supplied to a room if the room dry-bulb temperature is greater than 65°F.

(2) Operators of fan-coil, induction, baseboard or similarly operated units may alternate at any time between the requirements of paragraphs (a) and (b)(1) of this section.

(c) Operators of heat-pump systems shall set space-conditioning control devices in accordance with the requirements of paragraph (a) of this section.

(d)(1) In lieu of complying with the requirements of paragraph (a) of this section, operators of HVAC systems in which the room temperature is controlled by varying the temperature or flow volume of air which is introduced into the occupied space ("all-air" systems, including those with reheat) may set space-conditioning control devices so that:

(i) The dry-bulb temperature of the air leaving the cooling coils is 60°F or greater,

(ii) During the cooling season, the heating coil is turned off and the space-conditioning control device is set to 78°F, and

(iii) During the heating season, if the heating coil is turned on, the space-conditioning control device is set to 65°F.

(2) Operators of HVAC systems in which the room temperature is controlled by varying the temperature or flow volume of the air which is introduced into occupied space may alternate at any time between the requirements of paragraphs (a) and (d)(1) of this section.

(e)(1) Notwithstanding the requirements of any other subsection of this section, where a licensed professional engineer certifies by analysis that operation of a covered building in accordance with the requirements of paragraph (e)(2) of this section during periods prescribed in the analysis will result in the consumption of less energy than compliance with the requirements of paragraphs (a) through (d) of this section, that building may be operated in accordance with the requirements of paragraph (e)(2) of this section during those periods.

(2) For covered buildings qualified under the provisions of paragraph (e)(1) of this section, space-conditioning control devices shall be set at levels consistent with maximum energy savings, and the cooling system shall be adjusted such that:

(i) No liquid coolant is provided to the cooling coil at coolant temperatures below 55°F; or

(ii) The dry-bulb temperature of the air leaving the cooling coils is 60°F or greater.

(3) When a building or portion thereof is being cooled the use of reheat or other form of heat addition is prohibited, except that when an occupied covered building with a balanced distribution system is being cooled to a dry bulb temperature of 78 degrees or higher (or to another temperature permitted by a claimed exemption or approved exception) and the dry bulb temperature of any part or parts of the building falls to 65 degrees or below, heat may then be added to those part or parts by means of reheat equipment, portable electric heaters, opening the window or by any other method. In such cases heat may be added to maintain no more than 65 degrees F. in those occupied parts in which the temperature would otherwise be less than 65 degrees F. When reheat is thus added the temperature of the air leaving the cooling coils must be held at 60 degrees F. or greater, unless by so doing the temperature in other rooms would become higher than 78 degrees F. in which case a supply air temperature which is no lower than necessary to maintain a minimum of 78 degrees F. in those other rooms is permitted.

(4) When compliance with the requirements of paragraphs (a), (b)(1), (d)(1), or (e)(2) of this section would subject the compressor to the likelihood of damage, the coolant temperature may be lowered to the temperature level necessary to prevent such damage.

(5) Operators of covered buildings qualified under the provisions of paragraph (e)(1) of this section may alternate at any time between the requirements of paragraphs (a) and (e)(2) of this section.

(6) The certified analysis by a licensed professional engineer shall be made available to DOE or its delegate upon request.

(7) It shall be deemed a violation of the requirements of this part for a licensed professional engineer to falsely certify the analysis authorized by paragraph (e)(1) of this section.

§490.13 Requirement for accuracy of space-conditioning control devices.

(a) The operator of a covered building shall maintain within reasonable tolerances of accuracy and repair the space-conditioning control devices used to control temperature or humidity.

(b) No person may alter or relocate a space-conditioning control device to

thwart the intent of these regulations, or to bring about room temperatures prohibited elsewhere in these regulations.

§490.14 Regulation of building temperatures during unoccupied periods.

(a) During periods any covered building is unoccupied eight hours or more before the next normal occupied period:

(1) The heating system for that building shall not be operated if the anticipated minimum outdoor air dry-bulb temperature for the unoccupied period is greater than 50°F, and the cooling system for that building shall not be operated. The requirements of this subsection may be satisfied by turning off the circulating air or circulating water system.

(2) If the anticipated minimum outdoor air dry-bulb temperature for the unoccupied period is less than 50°F, the space-conditioning control devices for the heating system for that building shall be set such that one of the following results:

(i) The room dry-bulb temperature is less than 55°F;

(ii) The heated supply-air dry-bulb temperature is less than 100°F;

(iii) The heating-water dry-bulb temperature is less than 120°F; or

(iv) The space-conditioning control devices are set at less than 55°F, or at their lowest set point.

(3) HVAC system operation during unoccupied periods is permitted where requested by the public utility or district heating system servicing the building for purposes of load management.

(4) Notwithstanding the requirements of this section:

(i) HVAC system operation during unoccupied periods is permitted to the extent necessary to prevent damage to the covered building or its contents;

(ii) The HVAC system may begin operating at such time so that the temperature levels authorized by this Subpart may be reached at a time simultaneous with the beginning of the occupied period.

(5) When a building is heated by a heat pump such that the requirements of paragraph (a) (1) and (2) of this section may result in higher monthly peak demand or increased monthly energy consumption, or both, the space-conditioning control device during unoccupied periods may be set at 60 degrees F.

§ 490.15 Auxiliary heaters.

No auxiliary heating devices such as portable electric heaters, heat lamps or other devices whose principal function at the time of operation is to produce space heating may be operated except at such times that use of energy for heating purposes is authorized under the other sections of this subpart or when the covered building is unoccupied. When an auxiliary heating source is in use in a particular room or at a particular work station, the temperature in that room or at that work station shall not be brought above 65 degrees F.

§ 490.16 Use of ventilating equipment.

Nothing in this Subpart shall be deemed to prohibit the use of ventilating fan or pump power to heat a building to a dry-bulb temperature above 65°F or to cool a building to a dry-bulb temperature below 78°F.

§ 490.17 Measurement techniques.

(a) Where a space-conditioning control device controls the temperature for more than one room, the measurement may be taken in the room containing the device or any other regularly occupied room controlled by that device. The room with the highest temperature when cooling and the lowest temperature when heating may be measured for purposes of determining compliance with the requirements of this Subpart.

(b) Except as otherwise provided in this section, compliance with the requirements of this Subpart shall be determined by reading the set-point of the space-conditioning control device which controls the temperature for the room.

(c) Any of the following methods for measuring dry-bulb temperature, dew-point temperature, relative humidity and wet-bulb temperature may be utilized in lieu of a reading of the set-point on the space-conditioning control device. An operator shall be deemed to have complied with any temperature or humidity requirement of this Subpart so long as any one measurement technique indicates compliance with the relevant temperature or humidity requirement.

(1) Dry-bulb temperature shall be measured by:

(i) A thermometer placed within 24 inches of the space-conditioning control device;

(ii) The average of thermometer readings taken two feet away from and at the center of each external wall in the room, and at the center of the room;

(iii) If there are no external walls, the temperature at the center of the room; or

(iv) The average of thermometer readings taken at representative work stations in the room.

(2) Dew-point temperature shall be measured by:

(i) Observing the temperature of a glass at which condensation first occurs while cooling the glass;

(ii) By a dew-point indicating instrument; or

(iii) By inference from the wet-bulb temperature or the relative humidity.

(3) The relative humidity shall be measured by:

(i) A humidity-indicating instrument (hygrometer); or

(ii) By inference from the dew-point or wet-bulb temperature.

(4) The wet-bulb temperature shall be measured by:

(i) A wet-bulb-temperature-indicating instrument (psychrometer); or

(ii) By inference from the dew-point temperature or relative humidity measurement.

(5) The dew-point temperature, relative humidity and wet-bulb temperature may be measured within 24 inches of the humidity space-conditioning control device if located in the room, or in the same locations as used in the measurement of the dry-bulb temperature.

(6) To account for HVAC system cycling, all temperature and humidity readings may be taken as the average of several measurements taken at equal time intervals.

(7) Any temperature measurement shall be taken at between four and six feet from the floor.

(d) Before setting thermostats at the required level, the operator shall insure that the HVAC distribution system is properly balanced in accordance with generally accepted industry practice.

§ 490.18 Exemptions from heating and cooling restrictions.

(a) The requirements of this Subpart shall not apply to:

(1) Covered buildings or portions thereof which are neither heated nor cooled or which are equipped with space heating devices and space cooling devices with total rated output less than 3.5 Btu per hour (1 watt) per square foot of gross floor area.

(2) Buildings containing HVAC systems capable of using outdoor air, cold well water or evaporation of water for cooling effect without operation of a vapor compression or absorption-refrigeration system, but this exemption applies only with respect to cooling, and only during those periods when the outdoor air, cold well water and/or evaporation effect provides the only source for cooling.

(3) Buildings containing HVAC systems capable of using energy that otherwise would be wasted, but only during those periods when the otherwise

wasted energy provides the only source of heating or cooling energy.

(4) Buildings containing HVAC systems capable of using solar energy, but only during those periods when solar energy provides the only source of heating or cooling energy.

(b) For buildings or portions of buildings where the capacity of the HVAC system is insufficient to maintain the building or portion thereof at the minimum temperature levels for cooling authorized by this regulation when the building or portion thereof is occupied, the operator of said building may cool the building or portion of the building to a temperature level below 78°F before the building or portion of the building is occupied: *Provided,* That said reduced temperature level may only be maintained for the period of time necessary so that the temperature will reach the minimum level permitted by this regulation during the building's occupied period.

(c) Exemptions under this section may not be claimed when energy, other than waste, solar, pump or fan energy is used to operate a vapor compressor or absorption refrigerator.

Subpart C—Domestic Hot Water

§ 490.21 Regulation of hot water controls.

(a) The operator of a covered building shall set hot water temperature control devices so that the temperature of domestic hot water in such covered building does not exceed the greater of:

(i) 105°F, or

(ii) The lowest setting on the hot water temperature control device.

(b) The operator shall, where practicable, shut off domestic hot water circulating pumps during periods when a covered building is to be unoccupied for more than eight hours when such actions will not cause damage to the building, it systems, or internal processes or articles.

§ 490.22 Measurement of domestic hot water temperature.

(a) The temperature of domestic hot water shall be taken as the domestic hot water storage tank temperature measured in the hot water supply line, at the tank temperature control point, or at the tap nearest the tank discharge point.

§ 490.23 Maintenance of hot water temperature control devices.

(a) The operator of a covered building shall maintain all domestic hot water temperature control devices in that building within reasonable tolerances of accuracy and repair.

(b) No person may alter a hot water temperature control device with the intent of having that device function inaccurately.

§ 490.24 Exemption from hot water restrictions.

(a) The provisions of this subpart shall not apply in a covered building where the domestic hot water heating equipment also provides hot water for manufacturing, industrial, commercial or food preparation or handling processes and such processes or process clean-up procedures require hot water temperatures in excess of those prescribed in this subpart. In order to achieve the maximum possible energy savings, such temperature levels should be maintained at the minimum level necessary to provide for the exempted needs.

(b) The provisions of this subpart shall not apply in a covered building where domestic hot water is the only source available for dishwashing or other purposes in such covered building and state or local health regulations prescribe a minimum temperature level above 105° F for dishwashing or such other purposes. Domestic hot water control devices shall be set so as not to exceed the minimum level required by the state or local health regulations.

(c) The provisions of this subpart shall not apply to combination domestic water heating/space heating boilers during the heating season.

(d) The provisions of this subpart shall not apply at such times that solar energy provides the only source for domestic hot water heating energy. At such times that a hot water heating system using a non-solar energy source is being operated in conjunction with solar energy, this exemption shall not apply.

(e) The provisions of this subpart shall not apply to domestic hot water heating systems capable of using heat that otherwise would be wasted, but only at such times when the waste heat provides the only source of hot water heating energy.

(f) Exemptions under this section may not be claimed when energy, other than waste, solar, pump or fan energy is used to operate a vapor compressor or absorption refrigerator.

Subpart D—Exemptions

§ 490.31 General exemptions.

(a) In addition to the exemptions provided in other subparts, and subject to the limitations of this subpart, the following exemptions from the requirements of Subparts B or C of this part are available to any person for a building or portion of a building in accordance with the provisions of this section:

(1) Where a "manufacturer's warranty", service manual or equipment service contract requires specific temperature levels to prevent damage to special equipment.

(2) Where maintenance of certain temperature and humidity levels is critical to materials and equipment used in manufacturing, industrial or commercial processes.

(3) Where maintenance of certain temperature and humidity levels is required for the proper storage or handling of food or other agricultural commodities, raw materials, goods in process and finished goods.

(4) Any other circumstances where special environmental conditions are required to protect plant life essential to the operation of a business within a covered building, materials or animal life.

(5) Where maintenance of certain temperature levels is required:

(i) To protect the health of persons in offices of physicians, dentists and other members of health care professions licensed by the state to provide health-related services;

(ii) To protect the health of persons engaged in rehabilitative physical therapy in physical therapy facilities;

(iii) With respect to restrictions on heating only, to protect the health of persons utilizing indoor swimming pools;

(iv) To protect the health of individuals required by security, safety or health regulations to wear special or protective clothing to perform manufacturing, inspections or other industrial functions; or

(v) With respect to restrictions on heating only, to protect the health of persons in workplace or school shower and changing rooms where showers are part of customary work or school procedure.

(6) Where the structure or insulation of the building will be damaged.

(7) Where nutritional, recreational, and other facilities are specifically designated for use by senior citizens the thermostat may be adjusted to raise the dry-bulb temperature to 70 degrees F. during the heating season; except that this exemption applies only when senior citizens activity is being conducted and only to those portions of the facilities used for senior citizen activity.

(b) Exemptions claimed under Subparts B, C, and D of this part shall become effective when claimed.

(c) Any person claiming an exemption under any provision of Subparts B, C, or D of this part shall provide the owner or operator of the covered building with all

necessary information relating to the exemption including:

(1) The nature of the exemption and the section of the regulations claimed as the basis for exemption;

(2) The portions of the building for which the exemption is claimed;

(3) The required temperature levels in the exempt portions of the building consistent with maximum energy savings.

(d) The owner or operator of a covered building shall, upon request of DOE or its delegate, make available any information provided to the owner or operator under paragraph (c) of this section.

(e) Any person who claims an exemption to which he is not entitled is subject to the penalties provided in Subpart G of this part.

(f) Where the person entitled to an exemption under this Part is not the owner or operator of the covered building(s) to which the exemption applies, the owner or operator of the covered building(s) is authorized to adjust space-conditioning control devices and hot water temperature control devices in accordance with § 490.34.

(g) Any operator, other than an operator who claims an exemption, shall not be liable for violation of this Part as the result of acting in reliance upon an exemption which subsequently is determined to be invalid.

§ 490.32 Specific exceptions.

(a) In addition to the general exemptions available under § 490.31 or under Subparts B and C of this part, any person who would experience special hardship, inequity or an unfair distribution of the burden as a result of the requirements of Subparts B and C of this part may submit an "Application for Exception" in accordance with Subpart D of Part 205 of this chapter. An exception shall not become effective until such time as it is granted by DOE.

(b) If the person submitting the "Application for Exception" is not the owner or operator of the covered building(s) to which the requested exception is to apply, and if the exception is granted by DOE, then the owner or operator of the covered building(s) is authorized to adjust space-conditioning control devices and hot water temperature control devices in accordance with the provisions of the exception provided by DOE.

(c)(1) Any person who receives an approved exception under paragraph (a) of this section shall provide the owner or operator of the covered building with all necessary information relating to the exception including:

(i) The nature of the exception;

(ii) The portions of the building for which the exception is claimed;

(iii) The authorized temperature levels in the excepted portions of the building as determined by the terms of the exception or consistent with maximum energy savings.

(2) The owner or operator of a covered building shall, upon request of DOE or its delegate, make available any information provided to the owner or operator under paragraph (c)(1) of this section.

§ 490.33 Limitation of exceptions or exemptions.

(a) Where a portion of a covered building qualifies for an exemption under § 490.31 or any provision of Subparts B and C of this part, or for an exception under § 490.32, the operator may set temperature levels other than those prescribed in Subparts B and C of this part only for such portions of the covered building as necessary to maintain temperatures for the exempted sections. In those covered buildings where the space-conditioning control device or hot water temperature control device controls both the exempt and non-exempt portions of the building, the entire building or portion of the building may operate as if exempted from the temperature requirements of Subparts B and C.

(b) DOE may limit the exemption or exception granted by this part to all or any portion of a covered building. DOE may specify heating, cooling or hot water temperature controls to be applicable in the excepted portion of a covered building.

§ 490.34 Scope of exceptions or exemptions.

The operator of a covered building subject to an exemption or exception pursuant to this part shall, where practicable, maintain the temperature levels prescribed in Subparts B and C of this part, or such other levels consistent with maximum energy savings. When an exemption is claimed or an exception granted, the building owner or operator, or both, shall, upon notification, and without undue delay, take no further action to impose the temperature limits specified by those regulations in that portion of the building covered by the exemption or exception.

§ 490.35 Exemption procedures for states.

(a) A state or political subdivision thereof may seek an exemption from the application of this part in such state or political subdivision during a period for which the President of the United States or his delegate determines a comparable program of such state or political subdivision is in effect. The comparable program may include procedures permitting any person affected by the regulations to use alernative means of conserving at least as much energy in affected buildings as would be conserved by the temperature restrictions.

(b) A state or political subdivision thereof seeking an exemption on the ground that a comparable program is in effect shall submit to the secretary a "Request for Exemption" which shall include the following information:

(1) A full description of the comparable program, including the authority which allows for the mandatory imposition of the program;

(2) An estimate of the types and amount of energy which such program will conserve;

(3) The effective dates of the program;

(4) A description of energy conservation measures implementable at the state or local level and their expected energy savings;

(5) A comparison of energy savings estimated to result in that state or political subdivision from compliance with these regulations and estimated energy savings under the proposed comparable program which demonstrates that the comparable program conserves at least as much energy in the state or political subdivision as these regulations. The comparisons shall be performed using a consistent methodology for estimating building energy consumption.

(6) A description of procedures for the approval on a building-by-building basis of the alternative means and for enforcement of such alternative means by such state or political subdivision.

(7) Such other information as the Secretary may require.

(c) A request for exemption by a state or political subdivision shall be sent to the cognizant Regional Representative of the Secretary of Energy having jurisdiction over such State or unit of local government.

(d) For purposes of this section: "Comparable program" means a plan which is mandatory and which conserves at least as much energy in the state or political subdivision thereof as adherence to the requirements of these regulations would be expected to conserve in such state or political subdivision. The comparable program need not conserve energy in the same fashion as the building temperature restrictions require.

Subpart E—General Provisions

§ 490.41 Joint and several liability.

The owner and operator shall be jointly and severally liable for the execution of operator responsibilites under this part where an agency relationship exists between the owner and operator.

§ 490.42 Reporting requirement.

Any public utility or any fuel distributor shall make available to the DOE, upon request, customer lists or other information deemed necessary by DOE to administer and enforce these regulations.

§ 490.43 Self-Certification and Filing of Building Compliance Information Form.

(a) (1) The owner or operator of a covered building shall, within 30 days of the effective date of this regulation, complete in accordance with forms and instructions provided by DOE, and post in a prominent location within the covered building, a "Certificate of Building Compliance" certifying compliance with the requirements of this Part.

(2) The "Certificate of Building Compliance" shall set forth exemptions claimed by any persons within the covered building, or any authorized exceptions claimed by persons within the building.

(b) In addition to the requirements of paragraph (a) of this section, the owner or operator of a covered building shall, within 30 days of the effective date of this regulation, submit to DOE in accordance with forms and instructions to be provided by DOE a "Building Compliance Information Form" describing any exemptions or exceptions claimed by persons in that building.

(c) It shall be deemed a violation of this part for an owner or operator to knowingly provide false, misleading or incomplete information on the "Building Compliance Information Form" or the "Certificate of Building Compliance."

(d) DOE will make "Certificates of Building Compliance" and "Building Compliance Information Forms" and instructions available at convenient locations throughout the country. In addition, "Certificates of Building Compliance" and "Building Compliance Information Forms" and instructions for their completion may be obtained from the Office of Emergency Conservation Programs at the address listed in the For Information Contact section of this notice.

Subpart F—Administrative Procedures

§ 490.51 Purpose and scope.

This subpart establishes the procedures for determining the nature and extent of violations of section 524(c) of the EPCA and the procedures for issuance of a Notice of Violation, Violation Order, Violation Order for Immediate Compliance, Modification or Rescission Decision and Order, and Stay Decision and Order. Nothing in these regulations shall affect the authority of DOE enforcement officials in coordination with the Department of Justice to initiate appropriate civil or criminal enforcement actions in court at any time.

§ 490.52 Notice of violation.

(a) When any audit or investigation discloses, or the DOE otherwise finds, that any person has engaged, is engaged, or is about to engage in acts or practices contrary to the provisions of Standby Conservation Plan No. 2 (Emergency Building Temperature Restrictions) and implementing regulations in violation of section 524(c) of the EPCA, the DOE may issue a Notice of Violation. Any notice issued under this section shall be in writing and shall set forth the findings of fact and conclusions of law upon which it is based.

(b) Within 10 business days after the service of a Notice of Violation the person upon whom the Notice is served may file a reply with the DOE office that issued the Notice of Violation. The DOE may extend the 10-day period for good cause shown.

(c) The reply shall be in writing and signed by the person filing it. The reply shall contain a statement of all relevant facts pertaining to the acts or practices that are the subject of the Notice of Violation. The reply shall include a statement of the legal, business and other reasons for the acts or practices; a description of the acts or practices; and a discussion of the pertinent provisions and relevant facts reflected in any document submitted with the reply. Copies of all relevant contracts, reports, abstracts, compilations of data and other documents shall be submitted with the reply. The reply shall include a discussion of the relevant authorities which support the position asserted, including rulings, regulations, interpretations, orders and decisions issued by DOE.

(d) The reply should indicate whether the person requests an informal conference regarding the notice. A request for a conference must be in writing and shall be governed by the provisions of 10 CFR 205.171, which are incorporated by reference herein and made a part of this subsection.

(e) If a person has not filed a reply with the DOE within the 10-day or other period authorized for reply, the person shall be deemed to have admitted the accuracy of the factual allegations and legal conclusions stated in the Notice of Violation, and the DOE may proceed to issue a Violation Order in accordance with § 490.53.

(f) If the DOE finds, during or after the 10-day or other period authorized for reply, that no violation has occurred, is continuing, or is about to occur, or that for any reason the issuance of a Violation Order would not be appropriate, it shall rescind the Notice of Violation and inform the person to whom the Notice was issued of the rescission.

§ 490.53 Violation Order.

After considering all information received during the proceeding, the DOE may issue a Violation Order. The Violation Order may adopt the findings and conclusions contained in the Notice of Violation or may modify or rescind any such finding or conclusion to conform the Order to the evidence or on the basis of a determination that the finding or conclusion is erroneous in fact or law or is arbitrary or capricious. Such Order shall constitute a final agency order subject to judicial review. Unless otherwise specified, the Violation Order shall be effective 10 business days after the date of issuance. In the alternative, the DOE may determine that no Violation Order should be issued or that the Notice of Violation should be withdrawn for further consideration or modification. Every determination made pursuant to this section shall state the relevant facts and legal bases supporting the determination.

§ 490.54 Violation Order for Immediate Compliance.

(a) Notwithstanding the provisions of § 490.52 or § 490.53, the DOE may issue a Violation Order for Immediate Compliance, which shall be effective upon issuance and until rescinded or suspended, if it finds:

(1) There is a strong probability that a violation has occurred, is continuing or is about to occur;

(2) Irreparable harm will occur unless the violation is remedied immediately; and

(3) The public interest requires the avoidance of such irreparable harm through immediate compliance and waiver of the procedures afforded under § 490.52.

(b) A Violation Order for Immediate Compliance shall be served promptly

upon the person against whom such Order is issued by personal service, telex or telegram, with a copy served by registered or certified mail. The copy shall contain a written statement of the relevant facts and the legal basis for the Violation Order for Immediate Compliance, including the findings required by paragraph (a) of this section.

(c) The DOE may rescind or suspend a Violation Order for Immediate Compliance if it appears that the criteria set forth in paragraph (a) of this section are no longer satisfied. When appropriate, however, such a suspension or rescission may be accompanied by a Notice of Violation issued under § 490.52.

(d) If at any time in the course of a proceeding commenced by a Notice of Violation the criteria set forth in paragraph (a) of this section are satisfied, the DOE may issue a Violation Order for Immediate Compliance, even if the 10-day period for submitting a reply to that document has not expired.

§ 490.55 Modification or rescission.

(a) Any person to whom a Violation Order or Violation Order for Immediate Compliance is directed may make application for modification or rescission of such Order.

(b) The application shall contain a full and complete statement of all relevant facts pertaining to the circumstances, act or transaction that is the subject of the application and to the DOE action sought; and shall include a discussion of the relevant authorities which support the position asserted, including, but not limited to, DOE rulings, regulations, interpretations and decisions. The applicant shall fully describe the events, acts or transactions that comprise the significantly changed circumstances, as defined in paragraph (e)(2) of this section, upon which the application is based. The applicant shall state why, if the significantly changed circumstance is new or newly discovered facts, such facts were not or could not have been presented during the prior proceeding.

(c) The application should indicate whether the person requests an informal conference. A request for a conference must be in writing and shall be governed by the provisions of 10 CFR 205.171, which are incorporated by reference herein and made a part of this subsection.

(d)(1) If the DOE determines that there is insufficient information upon which to base a decision and if upon request the necessary additional information is not submitted, the DOE may dismiss the application without prejudice. If the failure to supply additional information is repeated or willful the DOE may dismiss the application with prejudice.

(2)(i) If the applicant fails to satisfy the requirements of paragraph (b) of this section, the DOE shall issue an order denying the application. The order shall state the grounds for the denial.

(ii) The order denying the application shall become final within 5 days of its service upon the applicant, unless within such 5-day period an amendment to correct the deficiencies identified in the order is filed with the DOE.

(iii) Within 5 days of the filing of such amendment, the DOE shall notify the applicant whether the amendment corrects the specified deficiencies. If the amendment does not correct the deficiencies, the notice shall be an order dismissing the application as amended. Such order shall be a final agency order subject to judicial review.

(e) *Criteria.* (1) An application for modification or rescission of an order shall be processed only if the application demonstrates that it is based on significantly changed circumstances.

(2) For purposes of this subpart, the term "significantly changed circumstances" shall mean—

(i) The discovery of material facts that were not known or could not have been known at the time of the proceeding and action upon which the application is based;

(ii) The discovery of a law, regulation, interpretation, ruling, order or decision that was in effect at the time of the proceeding upon which the application is based and which, if such had been made known to the DOE, would have been relevant to the proceeding and would have substantially altered the outcome; or

(iii) There has been a substantial change in the facts or circumstances upon which an outstanding and continuing order of the DOE affecting the applicant was issued, which change has occurred during the interval between issuance of such order and the date of the application and was caused by forces or circumstances beyond the control of the applicant.

(f) Upon consideration of the application and other relevant information received or obtained during the proceeding, the DOE shall issue an order granting or denying the application. The order shall include a written statement setting forth the relevant facts and the legal basis of the order. Such order shall be a final agency order subject to judicial review.

§ 490.56 Stay pending judicial review.

(a) Any person to whom a Violation Order or Violation Order for Immediate Compliance is directed may make application for a stay of such Order pending judicial review.

(b) The application shall contain a full and complete statement of all relevant facts pertaining to the act or transaction that is the subject of the application and to the DOE action sought. Such facts shall include, but not be limited to, all information that relates to the satisfaction of the criteria in paragraph (e) of this section. A copy of the Order from which a stay is sought shall be included with the application.

(c) If the DOE determines that there is insufficient information upon which to base a decision and if upon request additional information is not submitted by the applicant, the DOE may dismiss the application without prejudice. If the failure to supply additional information is repeated or willful, the DOE may dismiss the application with prejudice.

(d) The DOE shall grant or deny the application for stay within 5 business days after receipt of the application.

(e) *Criteria.* The grounds for granting a stay are:

(1) A showing that irreparable injury will result in the event that the stay is denied;

(2) A showing that denial of the stay will result in a more immediate serious hardship or gross inequity to the applicant than to the other persons affected by the proceeding;

(3) A showing that it would be desirable for public policy or other reasons to preserve the status quo ante pending a decision on the merits of the appeal or exception;

(4) A showing that it is impossible for the applicant to fulfill the requirements of the original order; and

(5) A showing that there is a likelihood of success on the merits.

(f) Upon consideration of the application and other relevant information received or obtained during the proceeding, the DOE shall issue an order granting or denying the application. The order shall include a written statement setting forth the relevant facts and the legal basis of the decision, and the terms and conditions of the stay.

(g) The grant or denial of a stay is not an order of the DOE subject to administrative review.

§ 490.57 Consent order.

(a) Notwithstanding any other provision of this Subpart, the DOE may at any time resolve an outstanding compliance investigation or proceeding with a Consent Order. A Consent Order must be signed by the person to whom it is issued, or a duly authorized representative, and must indicate agreement to the terms contained

therein. A Consent Order need not constitute an admission by any person that DOE regulations have been violated, nor need it constitute a finding by the DOE that such person has violated DOE regulations. A Consent Order shall, however, set forth the relevant facts which form the basis for the Order. A Consent Order is a final Order of the DOE having the same force and effect as a Violation Order issued pursuant to § 490.53.

(b) At any time and in accordance with the procedures of § 490.55, a Consent Order may be modified or rescinded upon petition by the person to whom the Consent Order was issued, and may be rescinded by the DOE upon discovery of new evidence which is materially inconsistent with the evidence upon which the DOE's acceptance of the Consent Order was based.

(c) Notwithstanding the issuance of a Consent Order, the DOE may seek civil or criminal penalties or compromise civil penalties pursuant to Subpart G concerning matters encompassed by the Consent Order, unless the Consent Order by its terms expressly precludes the DOE from so doing.

(d) If at any time after a Consent Order becomes effective it appears to the DOE that the terms of the Consent Order have been violated, the DOE may refer such violations to the Department of Justice for appropriate action in accordance with Subpart G of this part.

§ 490.58 Remedies.

A Violation Order, a Violation Order for Immediate Compliance, a Modification or Rescission Decision and Order, or a Consent Order may require the person to whom it is directed to make an appropriate adjustment in building or domestic hot water temperature, to post a correct Certificate of Building Compliance, and to take such other action as the DOE determines is necessary to eliminate the effects of a violation.

Subpart G—Investigations, Violations, Sanctions, Injunctions, and Judicial Actions

§ 490.61 Investigations.

Investigations will be conducted in accordance with the provisions set forth in 10 CFR 205.201.

§ 490.62 Violations.

Any practice that circumvents or contravenes or results in a circumvention or contravention of the requirements of any provision of this Part or any order issued pursuant thereto is a violation of the regulations stated in this part.

§ 490.63 Sanctions.

(a) *General.* Any person who violates any provision of this Part or any Order issued pursuant thereto shall be subject to penalties and sanctions as provided herein.

(1) The provisions herein for penalties and sanctions shall be deemed cumulative and not mutually exclusive.

(2) Each day that a violation of the provisions of this chapter or any order issued pursuant thereto continues shall be deemed to constitute a separate violation within the meaning of the provisions of this chapter relating to criminal fines and civil penalties.

(b) *Civil penalties.* (1) Any person who violates any provision of this part or any order issued pursuant thereto shall be subject to a civil penalty of not more than $5,000 for each violation.

(2) The DOE may at any time refer a violation to the Department of Justice for the commencement of an action for civil penalties. When the DOE considers it to be appropriate or advisable, it may compromise, settle and collect civil penalties.

(c) *Criminal penalties.* (1) Any person who willfully violates any provision of this part or any order issued pursuant thereto shall be fined not more than $10,000 for each violation.

(2) The DOE may at any time refer a willful violation to the Department of Justice for criminal prosecution.

(d) *Other penalties.* Willful concealment of material facts or false or fictitious or fraudulent statements or representations, or willful use of any false writing or document containing false, fictitious or fraudulent statements pertaining to matters within the scope of section 524(c) of the EPCA by any person shall subject such person to the criminal penalties provided in 18 U.S.C. 1001 (1970).

§ 490.64 Injunctions.

Whenever it appears to the DOE that any person has engaged, is engaged, or is about to engage in any act or practice constituting a violation of any regulation or order issued under this chapter, the DOE may request the Attorney General to bring an action in the appropriate district court of the United States to enjoin such acts or practices and, upon a proper showing, a temporary restraining order or a preliminary restraining order or a preliminary or permanent injunction shall be granted without bond. The relief sought may include, without limitation, a mandatory injunction commanding any person to comply with any such order or regulation.

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